The Mining Journal

Established 1835 — Railway & Commercial Gazette

Vol. CCXL No. 6142 — LONDON, MAY 8, 1953 — PRICE 8d

Triefus

DIAMOND DRILL BITS

*** Full range of specified matrices**

† Effective sludge clearance

* The range of matrices available is codified in terms of hardness and resistance to abrasion.

† The diamond pattern ensures that the sludge is cleanly removed from the working face of the bit.

TRIEFUS & CO. LTD. (WORKS) *BELSIZE LANE, LONDON, N.W.3*

Telephone : Primrose 3368 Telegrams and Cables : Resets, London

IT'S THE 'KNAPPING MOTION' THAT COUNTS

BAXTER'S

STONE BREAKING MACHINERY & PLANT

for Low Operating Costs in Mine and Quarry

New BAXTER 30" x 6" Roller Bearing Granulator

The efficient and dependable New Baxter product illustrated above, produces—

12/14 TONS ¾" CHIPPINGS PER HOUR or
15/20 TONS 1½" CHIPPINGS PER HOUR

The range of BAXTER equipment also includes *Automatic Feeders, Vibrating Screens, Rotary Screens, Coal and Coke Breakers, Elevators, Conveyors* and **COMPLETE PLANTS FOR MINES AND QUARRIES.**

Baxter machines give the Best Product with No Waste.

W. H. BAXTER LTD
71 GELDERD ROAD LEEDS 12. ENGLAND
Telephone: LEEDS 30254-5 Telegrams: KNAPPING LEEDS 12

GREATER OUTPUT · LESS HORSEPOWER · BETTER PRODUCT

AN ANSWER TO RISING COSTS

"Stream-Line filters enable us to use first grade oil over and over again with a big saving in maintenance charges—increased running efficiency and longer periods between overhauls. 40,000 other users are proving every day the value of Stream-Line filters in the trouble-free operation of diesel engines."

STREAM-LINE FILTERS LTD
INGATE PLACE, LONDON, SW8 TELEPHONE MACAULAY 1011

WOLVERHAMPTON DIAMOND DIE & TOOL Co. Ltd.

BOARTS

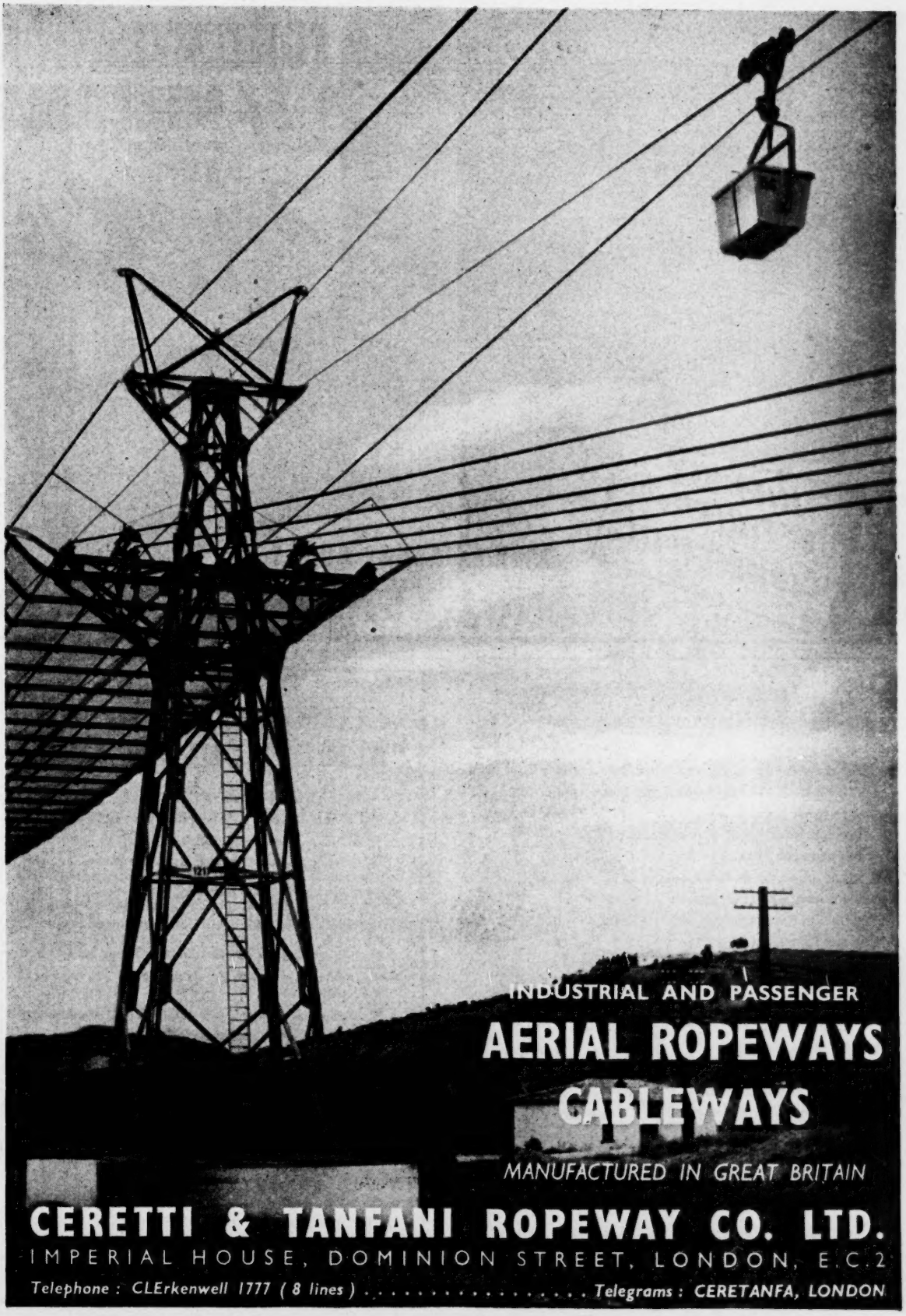
and

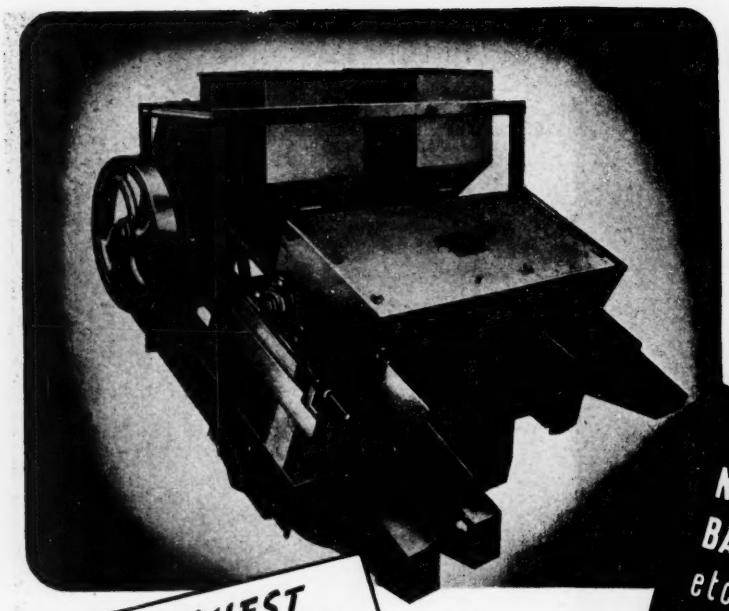
INDUSTRIAL DIAMONDS

Exporters

11 HATTON GARDEN, LONDON, E.C.1

Telephone : **HOLborn 3017** *Cables :* **Pardimon, London**


INDUSTRIAL AND PASSENGER
AERIAL ROPEWAYS
CABLEWAYS
MANUFACTURED IN GREAT BRITAIN
CERETTI & TANFANI ROPEWAY CO. LTD.
IMPERIAL HOUSE, DOMINION STREET, LONDON, E.C.2
Telephone : CLErkenwell 1777 (8 lines) . . . . . Telegrams : CERETANFA, LONDON



CONCENTRATION of MINERALS BY Modern Methods

TUNGSTEN · TIN · CHROMIUM
NIOBIUM · TITANIUM
BASE METALS · RARE EARTHS
etc. etc.

CONCENTRATING TABLES
MAGNETIC SEPARATORS
SCREENING PLANTS

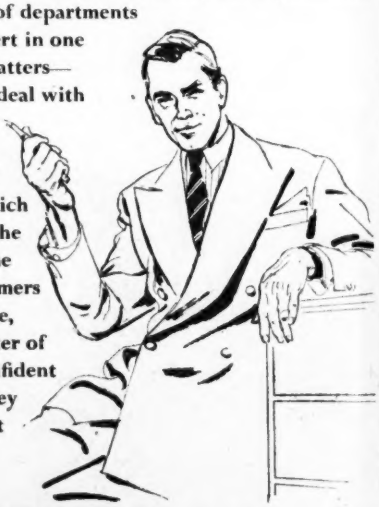
HIGHEST EFFICIENCY
LOWEST COSTS

DAVIES MAGNET WORKS
LIMITED
WARE · HERTFORDSHIRE · *Telephone* WARE 489

4M1A

OUT OF YOUR GROUND

There are so many occasions when one realises how difficult it is to be well-informed on all the financial problems which arise in these complicated days. That is why our organisation includes a number of departments which are each expert in one or other of these matters—departments which deal with Foreign Exchange, which understand the complexities of Wills and Trusts, which will not get lost in the labyrinths of Income Tax and so on. Customers may, in consequence, bring to us any matter of this kind, in the confident expectation that they will receive efficient attention and sound advice.



WESTMINSTER BANK LIMITED

ECONOMICS OF SOUTH AFRICAN GOLD MINING

A TEXT-BOOK FOR THE NON-TECHNICAL MINING INVESTOR

Published in Johannesburg, it is written by two accountants in collaboration with a geologist and a mining engineer, who explain how to make full use of the weath of geological, mining and statistical data put out by the mining companies

Describes clearly with the aid of simple diagrams:—

- **the geological systems of the Rand and O.F.S.**
- **modern prospecting, mining and ore treatment methods**
- **sampling, assaying and estimation of ore reserves**
- **compilation and interpretation of company reports and accounts**
- **Government lease payments and tax formulas**
- **the nature of gold shares and the factors affecting their value**

Copies obtainable from:

The Mining Journal

15 *WILSON STREET, MOORGATE, LONDON, E.C.2*

Price 42 shillings post free

CUT YOUR HAULAGE COSTS!

- RUNNING COSTS EXCEPTIONALLY LOW
- MAINTENANCE COSTS NEGLIGIBLE
- NO CLUTCH & NO GEAR CHANGING
- PERFECT DRIVING VISIBILITY
- DRIVING *ONLY BY* THROTTLE CONTROL
- SMOOTH STARTING & STEADY ACCELERATION
- NO SHOCK LOADS & NO ENGINE STALLING

NORTH BRITISH DIESEL HYDRAULIC SHUNTERS *Embody* VOITH-NORTH BRITISH HYDRAULIC TURBO TRANSMISSION

The North British Diesel Hydraulic Shunter is always available for immediate operation, without complicated control gears. No notching up is required as on an electric controller; full throttle can be reached almost immediately.

Fully controlled very slow speed operation for indefinite periods is a noteworthy feature of the Shunter, *i.e.*, inching a train over a weigh-bridge.

There is no snatching or jerking.

In actual performance, it has been shown that running costs are exceptionally low and maintenance costs are negligible.

The locomotive is robust and simple in construction and design.

Descriptive literature sent on request

Range of Standard Diesel
SHUNTING LOCOMOTIVES
STANDARD AND BROAD GAUGE

Horse Power	Type	Weight Variations	Max. Tractive Effort Variation
200	0-4-0	27-33 tons	18,000-22,000 lbs.
300	0-4-0	33-40 tons	22,000-26,700 lbs.
300	0-6-0	36-44 tons	24,000-29,500 lbs.
400	0-6-0	44-52 tons	29,500-35,000 lbs.
500	0-6-0	50-58 tons	34,000-39,000 lbs.

NORTH BRITISH LOCOMOTIVE COMPANY LTD GLASGOW

We make *sure* . . .

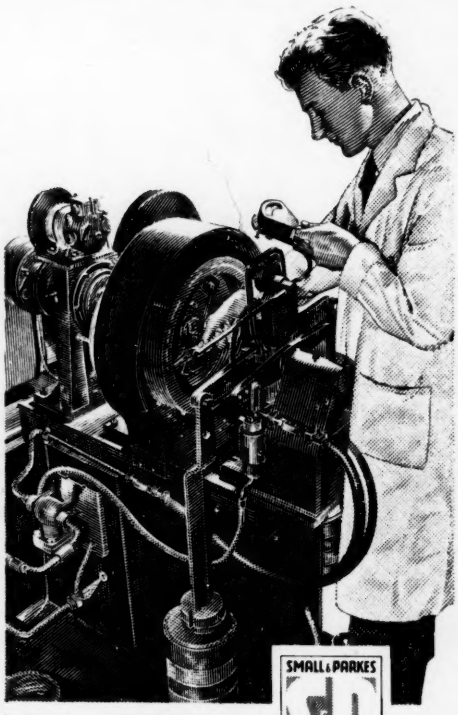
DEPOTS AT

(Towns & Telephone Nos.)

BELFAST 25103
BIRMINGHAM 5. Midland 4659
BLACKBURN 6581
BRISTOL 27214
CARDIFF 27026
CARLISLE 589
CHESTER 21280
COVENTRY Coventry 64914
EDINBURGH 1. Central 4234
EXETER 3813
GLASGOW C.2. Central 4595
HULL ... Central 52072
LEEDS 3. ... ... 20664/5
LEYTON Leytonstone 6068
LIVERPOOL 1. Royal 1251 and 5202
MANCHESTER 3. Blackfriars 0596
NEWCASTLE-ON-TYNE 2. 27142 and 27942
NOTTINGHAM 43646
SHEFFIELD 1. 25529
SOUTHAMPTON ... 71276
STOKE-ON-TRENT ... 44021
WIMBLEDON 4248/9

Republic of Ireland: **DUBLIN** 35 Westland Row 66597

The numerous critical stages in making good industrial brake linings are our exclusive worry. If there were ten times as many the fact would remain that you, the user, are interested only in the final result. But because you may sometimes wonder why DON Industrial Brake Linings are just that little bit better, we are taking you behind the scenes . . . **Here, we are making sure that DON Industrial Brake Lining will easily withstand the most drastic conditions it will encounter.** An obvious thing to do? Precisely . . . the pains which *we* take over even the most obvious things mean that *you* can always be sure of DON.

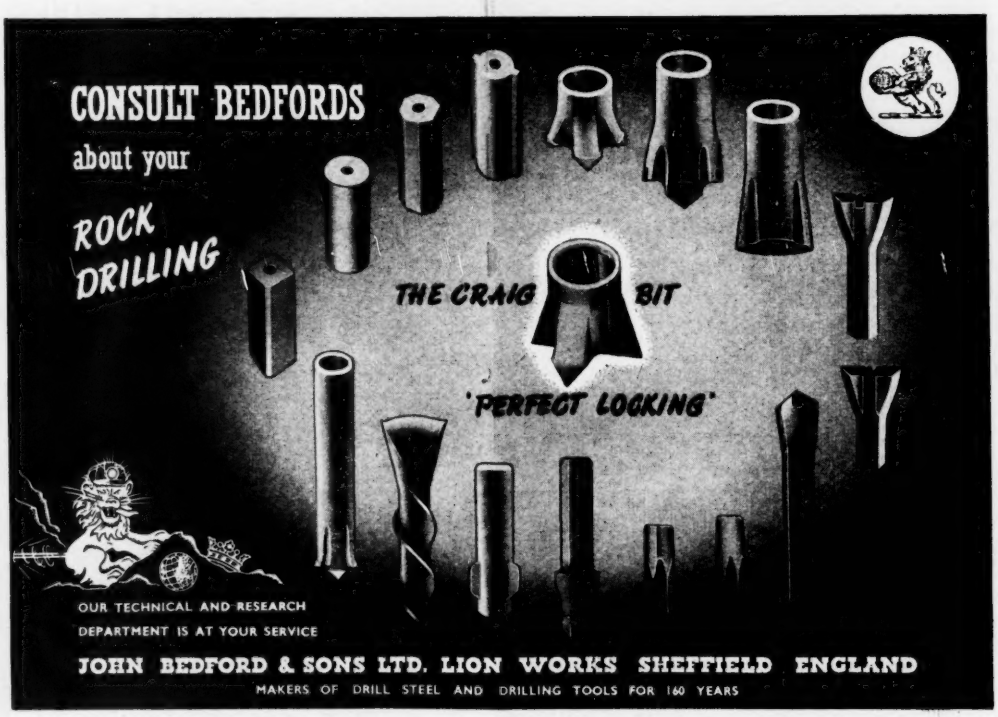


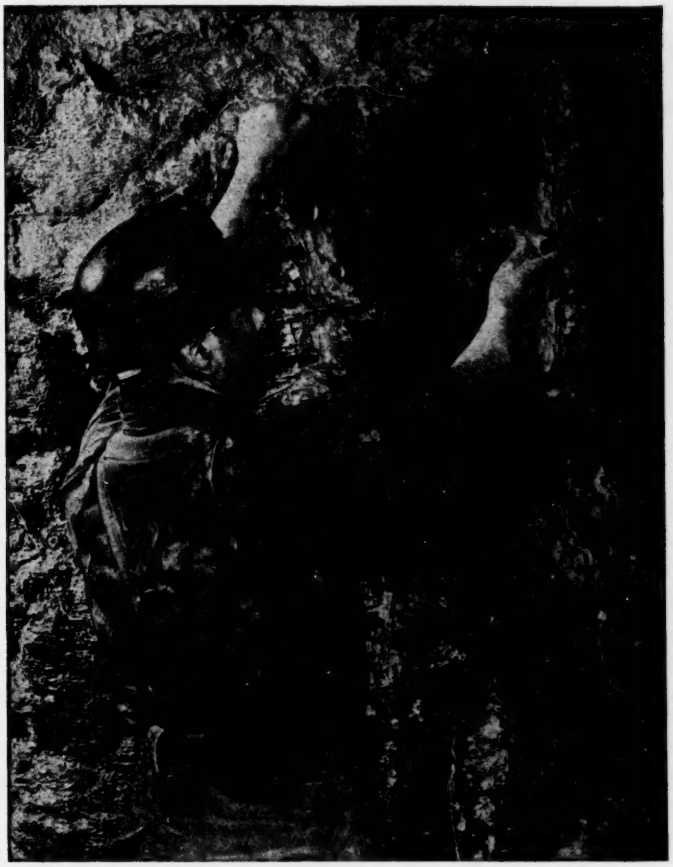
Fit DON INDUSTRIAL BRAKE & CLUTCH LININGS to be *sure*

Also manufacturers of:—
Grooved Roko Belting
Roko Spindle Tapes
Karmal Engine Packings

SMALL & PARKES SP PRODUCT

SMALL & PARKES LTD • MANCHESTER 9 LONDON: 76 VICTORIA ST., S.W.1 IBL/11


CONSULT BEDFORDS
about your
ROCK DRILLING
THE CRAIG BIT
'PERFECT LOCKING'
OUR TECHNICAL AND RESEARCH DEPARTMENT IS AT YOUR SERVICE
JOHN BEDFORD & SONS LTD. LION WORKS SHEFFIELD ENGLAND
MAKERS OF DRILL STEEL AND DRILLING TOOLS FOR 160 YEARS



'NOBEL-GLASGOW' Explosives and Accessories

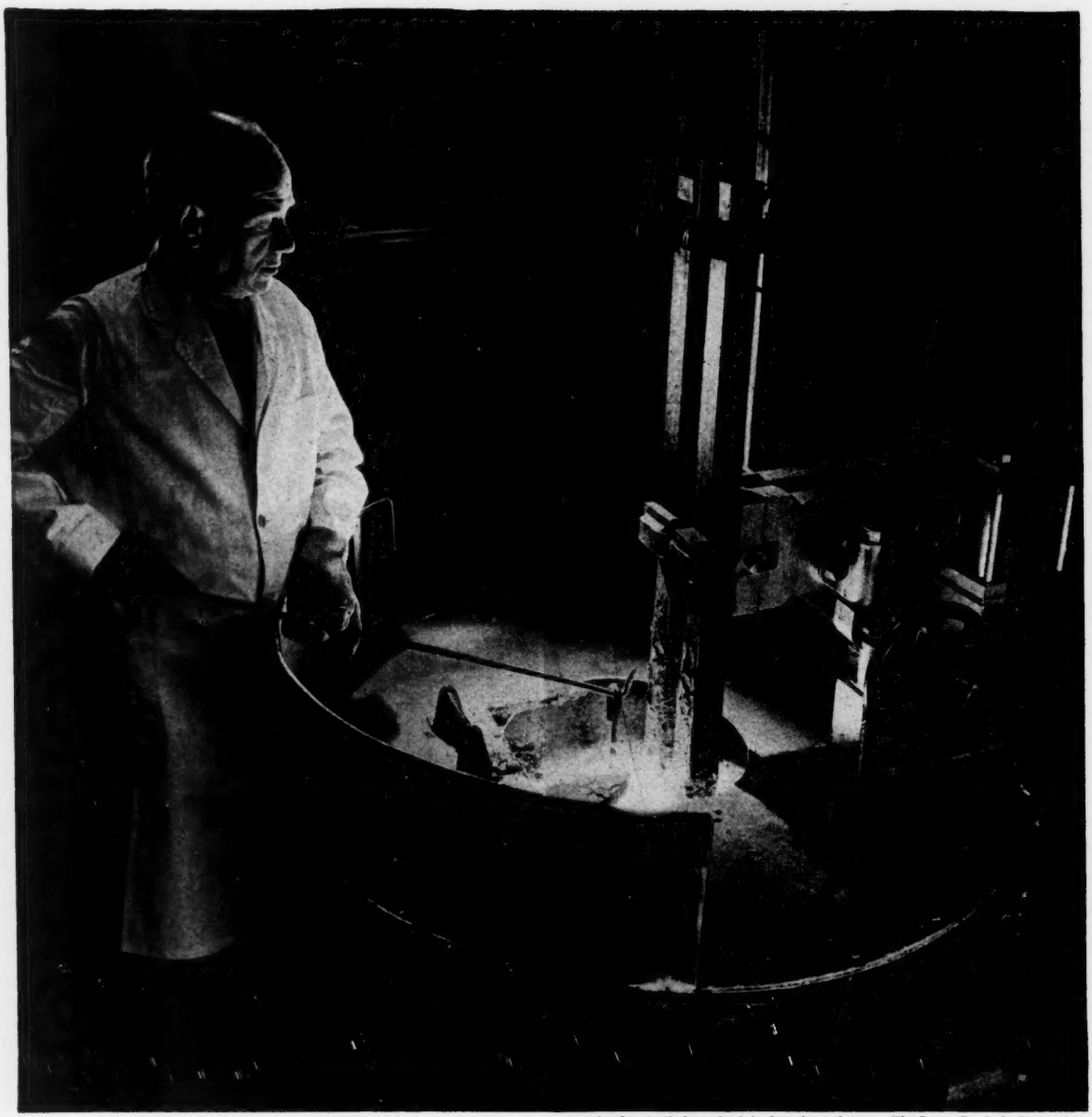
There is a 'Nobel-Glasgow' explosive for every blasting operation.

Users are invited to apply to the Nobel Division of Imperial Chemical Industries Limited for assistance with their problems.

IMPERIAL CHEMICAL INDUSTRIES LIMITED
NOBEL DIVISION, 25 BOTHWELL STREET, GLASGOW, C.2

ICI

N.44



An electrically heated salt bath in the tool room The Rover Co. Ltd., Birmingham

Tools, dies, and gauges

HEAT TREATMENT IN A SALT BATH IS RAPID, it gives uniform results, and it protects the metal from oxidation — considerations particularly important for tools, dies, gauges, and all fine-tolerance work. An electrically heated salt bath will bring your tool room up to date, and will also give you the advantages of cleanliness, convenience, and accurate temperature control.

HOW TO GET MORE INFORMATION

Your Electricity Board will be glad to advise you on how to use electricity to greater advantage — to save time, money and materials.

The new Electricity and Productivity series of books includes one on heating — " Electric Resistance Heating ". Copies can be obtained, price 9/- post free, from E.D.A., 2 Savoy Hill, London, W.C.2, or from your Area Electricity Board.

Electricity for PRODUCTIVITY

Issued by the British Electrical Development Association

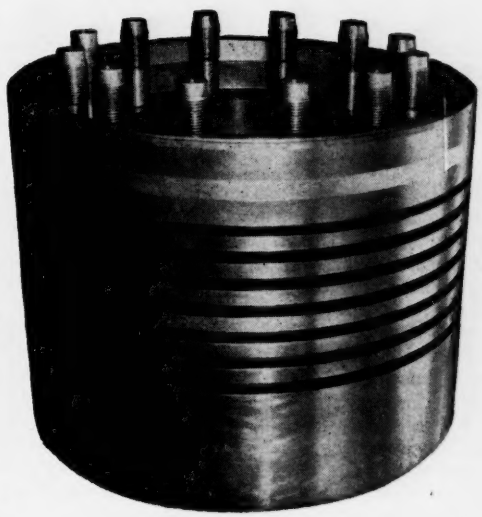
Cast Iron with a difference!

Spheroidal Graphite

Iron castings with vastly improved properties are now in commercial production. The important difference in these new irons is in the form of the graphite which is present as spheroids instead of flakes.

In the tensile test, the spheroidal irons have a definite yield point preceded in the stress-strain diagram by the same kind of straight-line relationship as is found in steels. Minimum properties which may be expected in commercial production are to be found in the table below.

	Maximum Stress t.s.i.	Yield Point t.s.i.	Elongation per cent
Pearlitic	37 min.	27 min.	1 min.
Pearlitic/ Ferritic	32 „	24 „	5 „
Ferritic	27 „	20 „	10 „



Fully machined piston in S.G. iron for use in large marine diesel engine made by John G. Kincaid Ltd. The casting (weight as cast 23 cwt.) was supplied by Sheepbridge Engineering Ltd.

The process is the subject of patents and patent applications, and The Mond Nickel Company Limited has granted a number of manufacturing licences. For names of suppliers, write to:—

MOND NICKEL

THE MOND NICKEL COMPANY LIMITED

Sunderland House, Curzon Street, London, W.1.

Goodyear Hose stands tough treatment in unique mine

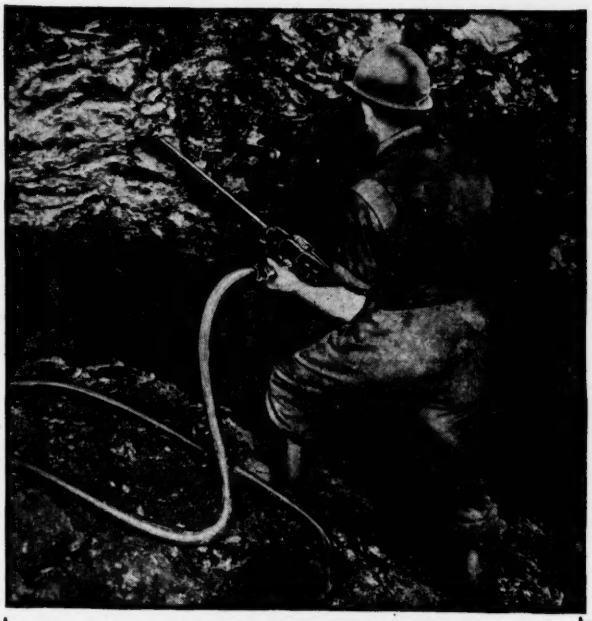
LONG, DEPENDABLE SERVICE UNDER PUNISHING CONDITIONS

AT Settlingstones in Northumberland, close by Hadrian's Wall, is a mine unique in the whole world. It is the only mine where witherite ore is the main product. The owners are Settlingstones Mines Ltd., founded in 1907 to develop a mine started in 1690.

A Remarkably Versatile Ore

Witherite, a natural barium carbonate, has many uses in industry and medicine. For instance, barium sulphate, a derivative of witherite, is used in the manufacture of paints, inks, linoleum, rubber and paper. Other derivatives go into textiles, explosives, ceramics and soap. The items listed are just a few of the uses of this remarkable ore.

The main stopes at Settlingstone are between 600′ and 700′ below ground. The ore is first drilled and then blown down. Compressed air is fed to the percussive drills by Goodyear hose, which is carried over the top of the loose rock. This hose operates under extremely punishing conditions, but it has given long, dependable service, and is proved to be fully capable of withstanding cutting and bruising. Other Goodyear hose is used for ventilation and dewatering as the mine is developed.

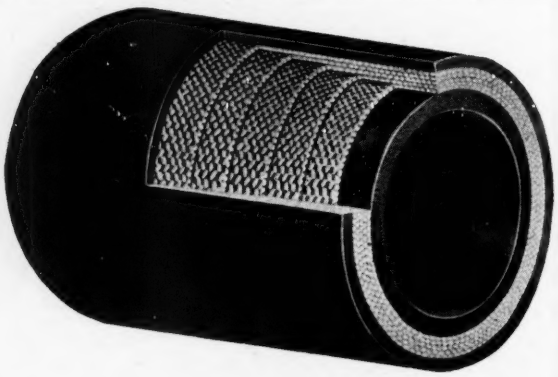


★ **DRILLING A CHARGE HOLE IN SETTLINGSTONES MINE** ★

Working under extremely punishing conditions, the Goodyear Hose which feeds compressed air to the percussion drills is giving long, dependable service at Settlingstones.

Reliability of Goodyear Hose

Why are Goodyear Industrial Rubber Products chosen for such a unique mine as this. Because their reliability is the result of over 50 years' experience in rubber engineering. Because skilled Goodyear technicians supervise their manufacture from the very beginning. Because rigid adherence to specifications of materials and processes gives complete confidence. Because only the very finest raw materials are used. That is why Goodyear products are giving years of trouble-free service, the world over.



HEAVY DUTY WRAPPED PLY HOSE

Specially built to withstand the toughest operating conditions, this hose is ideal for use with air-drills, chipping, caulking and riveting hammers. It has a seamless, non-porous tube reinforced with wrapped plies of heavy-duty fabric. Manufactured in 60′ lengths. There is an alternative type available which has braided cord reinforcement.

Illustrated and informative catalogues are now available for all Goodyear Industrial Rubber Products. Please write to Dept. 1/0, Goodyear Tyre & Rubber Co. (G.B.) Ltd., Wolverhampton, stating the products in which you are interested.

GOODYEAR

INDUSTRIAL RUBBER PRODUCTS

TRANSMISSION BELTING · V-BELTS · CONVEYOR BELTING · INDUSTRIAL HOSE

The Mining Journal

Established 1835

Vol. CCXL No. 6142 **LONDON, MAY 8, 1953** **Price 8d**

CONTENTS

Notes and Comments 537
From Our Canadian Correspondent 539
The St. Lawrence Seaway 540
Development in the South Wales Coalfield 543
Increased Exportation of British Earth Moving Machinery 544
Machinery and Equipment 545
Tub Straightening and Rectifying Equipment; A New Economy Engine; Petrol Engine Modified to Tractor Vaporizing Oil; A Revolutionary Mines Diesel Locomotive; Exhibits at the Physical Society Exhibition.
Metals, Minerals and Alloys 547
The Mining Markets 549
Company News and Views 550
Welkom's Flexible Mining Operations; Sealing Free State Geduld's Water Fissures; "A" Reef Value at President Steyn; Western Holdings Progresses; Underground Work at President Brand; Loraine Gold's Shaft Sinking Programme; New State Areas Continues on Lower Scale; Capital Repayments of Wit. Gold; Mining Year Book.
Company Shorts 551
Company Meetings and Announcements 552
Anglo American Corporation of South Africa Ltd.; Ashanti Goldfields Corporation Ltd.; Bibiani (1927) Ltd.; Camp Bird; Triefus and Co. Ltd.; The British Aluminium Company Ltd.

Published by The Mining Journal Ltd. at 15 Wilson Street, Moorgate, London, E.C.2. MONarch 2567 Subscription £2 per annum

NOTES AND COMMENTS

Congress and Tariffs

In our issue of April 24 possible difficulties over the liberalization of the policy of the United States with regard to foreign trade were indicated, and the snags which President Eisenhower's earlier statements and reports of the outcome of conversations between him and Sir Winston Churchill and Mr. Butler, when they visited America early in the year, seemed likely to encounter in Congress were suggested. Since then, as noted last week, antagonism has become more pronounced in connection with the Simpson Bill, hearings on which are now proceeding. General industry witnesses had their innings last week when representatives of a wide range of manufacturers pressed for greater protection in favour of their several products ranging from the chemical, glass and optical manufactures, down to footwear, velveteen, jute packing and fatty acids. This week, Administration witnesses are being heard and next week residual fuel oil producers are due to take the floor.

While the Simpson Bill would extend the Reciprocal Trade Agreement Act for one year, from June 12 when the present Act expires, it is far from being the standstill prolongation which the President has asked for. In particular, it would strengthen the peril-point and escape-clause provisions of the present Act, impose duties on crude petroleum and petroleum products, especially residual fuel, and set up sliding-scale stabilizing duties on imported lead and zinc. In fact, one State Department spokesman has characterized the measure as being designed to "tear the vitals out of the Recripocal Trade programme." At one stage a compromise between Government officials and the protectionists was under consideration to extend the existing arrangement with the addition of making Tariff Commission recommendations binding on the President, but this seems to be something of a *pis aller*.

It is too early yet to judge how far such a move might be in conflict with G.A.T.T., but there can be little doubt that its implementing would have a pronounced effect on international trade sentiment. In fact, a resolution has already been introduced in the Canadian Parliament to consider the imposition of substantial export duties on nickel and asbestos upon which the United States is entirely dependent on Canada, should effect be given to these protectionist moves. As the sponsor of the resolution, Mr. Byrne said, "Some circles in the U.S. want to take our lead and zinc in times of shortage and want us to absorb the grief when supplies become adequate and prices are reduced."

The time left for legislation to receive the President's approval before the Recriprocal Trade Agreement Act is due to expire is short. The legislative programme of Congress has been already upset by the prolonged debate in the Senate over Submerged Lands Bill, and if Congress goes into recess over the hot summer months, as is now suggested, with the many witnesses assembled in support of the Simpson Bill, it may prove impossible to pass it before June 12. In fact, this may be what its supporters are hoping for. Once anything approaching a tariff war develops it is very difficult to say where it would stop. The situation is clearly disquieting and will need close watching.

Schuman Plan Troubles

On the appointed day, Friday, May 1, the first phase of the Schuman Plan was duly completed. Throughout the six member States Luxemburg, Belgium, the Netherlands, Italy, France, and Germany, a common market for coal, iron ore, scrap, pig iron and steel is now established. Customs dues, quota barriers, and discriminating rail freights, are abolished, and nominally the principle is accepted of the free circulation of supplies of these essential commodities irrespective of the national frontiers.

The basic idea which has inspired the establishment of the European Coal and Steel Community is essentially sound. The expiration of its sponsors is that throughout the territories of the affiliated nations access to supplies of mineral wealth should be freed from all restictions, and that the sole criteria of future development should be low costs of production, increased output, and advanced technical efficiency. It pre-supposes, however, the willingness of the participants to surrender individual and national interests without which the whole plan is foredoomed to failure.

Already serious differences and disputations have developed. Two law suits have been filed for hearing by the Luxemburg Court of Justice concerning the validity of the restrictions imposed by the High Authority. Ger-

many is insisting on higher prices for coal. Discriminations, refunds and rebates are a source of much acrimony and discontent, and above all there are complaints which appear to be well founded, of attempts to rig the market to maintain uneconomic price levels.

M. Jean Monnet, the President of the High Authority, clearly perceives the danger of any attempt to revive "Cartelization." He has warned the association of steel producers that he will resist any concerted attempt to raise prices in defiance of the decisions of the High Authority. All steel producers are required to publish their price schedules by May 20 and these will be binding as maxima and as minima.

The High Authority is vested with extensive disciplinary powers, and is apparently determined to use them if the necessity should arise. But it is evident that all is not plain sailing for the specific evolution of the Schuman Plan and the testing time may come later in the year when there is a steel surplus and the long term sales problem becomes a challenging issue.

A Canadian View of the Paley Report

With the metal markets in their present depressed state another look at the Paley Report can provide a tonic for those able to take the long view. This is available in abbreviated form and with particular reference to the Report's implications for Canada in the March issue of *The Bank of Novia Scotia's Monthly Review* which reaches the conclusion that it seems highly probable that the proportion of Canadian exports going to the U.S.A. will remain at more than half and may go as high as two-thirds.

"From one point of view," says the Review, "this means increasing Canadian dependence on the U.S. market. But it also means increasing U.S. dependence on Canadian sources of supply. Though there will in the future undoubtedly be periods of declining U.S. demand for Canadian products, it is most improbable that the United States will ever again, as she did in the early 'thirties, find it possible almost to do without Canadian supplies of many basic commodities."

The Review adds that in the next two decades Canada may well be able to bargain more effectively for better terms of entry into the U.S. market for the processed and fabricated forms of the basic commodities which the United States requires, but often prefers to take in their primary forms. Canada should also be able to pursue increasingly effective policies of resource conservation.

Pointing out that the growing dependence of the United States on imported materials has had a profound effect on Canada in the last quarter century, the Review suggests that the influence on Canada of rising U.S. imports of materials will be at least as great in the next quarter century.

"Canada has the materials the United States needs—the base metals, the aluminium or 'packaged power,' the iron ore, the uranium and other 'new' metals, the pulp and paper and the lumber. Her location gives her a major advantage in competing for the U.S. market, and from a strategic viewpoint she is considered by the United States the most secure source of supply outside of American borders. More than that, the Canadian economy is regarded with confidence by Americans—the result of a long and rewarding investment experience, a comparatively free economic system and a strong currency."

As seen by the Paley Report (the main conclusions of which has already been summarized in *The Mining Journal*), the picture of demand in the 'seventies is good for copper, lead and nickel, and reasonably good for zinc. In each case it is estimated that almost twice as much production will be needed from the free world outside of the United States as is forthcoming to-day. By 1975 the United States may be importing half her copper and zinc and three-quarters of her lead, as well as almost all of her nickel. The Paley Report indicates that zinc may be relatively plentiful and lead scarce in years to come, and estimates that the price of lead may rise relative to other commodities.

When it comes to aluminium, the Paley Report foresees a very sharp increase in demand and projects U.S. demand for 1975 at four times the 1950 level. The Report points out that the possibilities of substituting aluminium for wood and steel are potentially much more important than those of further substitution of copper, lead and zinc. If such replacement should occur to a significant extent in the next twenty-five years, U.S. demand in 1975 could be ten times the 1950 level. Aluminium's power to compete has increased very substantially, its price being almost the same as before the war, while those of steel, copper, lead and zinc are from 80 per cent to 200 per cent higher, and that of lumber is more than four times pre-war.

The Paley Report places a great deal of emphasis on Canada as a supplier of iron ore. Though it looks to Venezuela for notably increased supplies, it clearly regards Canadian sources as vital. It goes as far as to advocate strongly the early construction of the St. Lawrence Seaway as a means of making Quebec-Labrador ore more accessible to the steel mills of the central area of the United States, and, indeed, envisages a supply of as much as 40,000,000 tons per annum from that one source by 1975.

The Exploitation of Sahara Resources

It is reported from Paris that development is to begin immediately of the area south of Colomb Bechar on the fringe of the Sahara Desert. This announcement is in accordance with a decision taken at an inter-ministerial council by the French Premier, the Governor General of Algeria, the Resident General of Morocco, and the head of the committee of the "Zones of Organization" of the French Overseas Union.

It is interesting to note that it is stated large quantities of coke, iron, copper, manganese and petroleum have been located in this area of the Sahara. Plans call for the establishment of large-scale facilities for the treatment of minerals.

A railway from Oran already extends to the oasis of Colomb Bechar, and several extensions to nearby mineral deposits have been laid. The Oran-Colomb Bechar railway link is eventually to be extended as the Trans-Saharan line, across the desert to the Niger River at Timbuctoo.

In our issue of July 27, 1951, a correspondent pointed out that two prospecting camps had been established at Ougarta and Tebalba for some time. Problems of supply and transportation were at that time regarded as formidable.

As a companion project to the Sahara programme, prospecting was carried out in 1951 in the Tell-Atlas mountains when it was hoped to discover deposits of iron ore, phosphates, lead and zinc. At that time too, the Algerian government instigated systematic investigations for oil. The areas covered were portions of the Sahara and other parts of Algeria.

Oil in Turkey

Turkey has taken its place among the oil-producing countries of the Near and Middle East, and is unique in that the discovery of oil within Turkish borders has been due to the Government's efforts and financial support.

The search for oil in Turkey goes back to the last decade of the nineteenth century when, in the Alexandretta Gulf basin and along the shores of the Sea of Marmara, exploration for oil began under primitive conditions.

The year 1933 marked the commencement of serious Governmental efforts to discover large scale deposits and by a law enacted in May of that year, the State created a

service for the exploration and exploitation of the petroleum resources of the country. From that time and in subsequent years general and detailed geological studies were carried on, and as a result the south-eastern area of the country adjoining Iraq and Syria was selected for concentrated attention.

Drilling was begun at Basbirin in 1934 and was continued in the neighbouring areas of Hermis, Kerbent and Raman. Oil was discovered in the latter area in 1940. The development of the industry, however, was delayed by World War II, and it was not until 1948 that Raman could be considered as an economic proposition. With 19 operating wells, Raman can now be considered an interesting oilfield, with a reserve of between 50,000,000 bbl. to 100,000,000 bbl. of 20 deg. gravity oil. During 1952, at Garzan, 10 miles to the north-east of Raman, oil was also found. The production is approximately 500 bbl. per day at a gravity of 26 deg.

While exploration continues in adjoining regions of south-eastern Turkey, Governmental efforts have been intensified in the Alexandretta Gulf basin in Adana and at Hatay, bordering the Mediterranean. A well in Adana has progressed to excess of 10,000 ft. depth. Prolonged negotiations over the construction of the refinery at Batman, near the Raman field, have recently been concluded.

Canada

(From Our Own Correspondent)

Montreal, April 7

Miners in Canada are placing increasing emphasis on development associated with base metals. Nickel and iron hold the spotlight along with aluminium, ilmenite, copper, magnesium, lead, zinc, columbium, tantalum, etc. Another development of special interest has been the recent discovery of the presence of tin in the newly found base metal ores in the province of New Brunswick. Present indications are that the tin content of the ore is small—estimated at 0.2 per cent or a gross value of under $5 per ton. However, having in mind the prospect of reduction works capable of handling 5,000 tons of ore per day, the recovery of possibly 3 lb. of tin as a byproduct from each ton of ore treated, the output of tin might conceivably reach 15,000 lb. per day.

ADVANCE SALE OF NICKEL

Falconbridge Nickel Mines has made a firm advance sale of 100,000,000 lb. of nickel to the United States government at the prevailing market price, the first 2,000,000 lb. to be delivered this year, and the remainder of the purchase to be completed by 1962. In addition, the U.S. Government has offered to purchase a further 50,000,000 lb. of nickel at market prices prevailing between 1962 and 1967. The prevailing market price for nickel is 58 c. per lb. So as to carry out delivery, Falconbridge plans to spend approximately $42,000,000 on expansion of mine development and plant increase. Among other things, the company's nickel refinery in Norway will be enlarged to a rated capacity of 40,000,000 lb. annually. While inner details have not been disclosed, it is known that in the transaction between Falconbridge and the U.S. Government, the Falconbridge Company receives an amortization allowance of $42,000,000 to cover the cost incurred in providing for the increase in nickel production. It has been suggested in financial circles that the prevailing price of 58 c. per lb. for 100,000,000 lb. of nickel, together with $42,000,000 in amortization, will gross $100,000,000 to Falconbridge or $1 per lb. for the initial firm contract. This represents the largest individual metal sale in the history of Canadian mining. The spur to it all is the use of nickel in the manufacture of jet engines —and the urgency in which such engines are required in enormous numbers.

The new railway will be completed to the centre of the iron ranges of northern Quebec and Labrador by the end of the current year. The material and equipment with which to gear the mines for production will then go in by trainload. It has been estimated that by late in the summer of 1954 the first trainloads of iron ore will find their way to the loading docks on the north shore of the Gulf of St. Lawrence. Then, overnight as it were, the iron ore production of Canada will be more than doubled—and with a production rate of some 20,000,000 tons annually visualized within the next few years. The iron ore in sight in the new field at this time is estimated at over 400,000,000 tons of high grade haematite and with work only in its early stages. Added to this is an estimated 1,000,000,000 tons of 45 per cent magnetite available for utilization in far distant future years.

A NEW COPPER-NICKEL DEPOSIT

A new deposit of copper-nickel ore has been discovered on the White River in the Yukon Territory at a location referred to by prospectors as Lower Canyon. Prospectors Airways Company has secured extensive territory. Preliminary information carries news of a zone some 500 ft. in width of disseminated sulphides, with massive lenses each several feet in width coursing through the wide deposit. Claim-staking reached a point of frenzy following reports of the new discovery.

Kerr-Addison has taken on all the aspects of one of the major gold mines of the world. Ore reserves between surface and a depth of 2,650 ft. are estimated at 15,500,000 tons containing an average of $9.61 per ton. It is significant that development between a depth of 2,500 ft. and 2,650 ft. has added approximately 1,000,000 tons of ore carrying $16.25 per ton. These high values at that depth have introduced optimistic expectations accordingly as deeper levels may be developed. Shaft sinking has been carried to 4,000 ft. in depth, and lateral work is proceeding toward downward continuation of the ore zone at the 2,800, 2,950, 3,100, 3,250, 3,400, 3,550, and 3,700 ft. levels. Output of gold is currently in excess of $1,000,000 per month.

COMPANIES SPREAD THEIR ASSETS

There is a growing trend among Canadian mining companies to diversify their mining interests. Enterprises which have succeeded in building up large treasury surpluses throughout many years of successful operation on one producing mine are investing a considerable part of their surplus in other undertakings, gold mines, base metal mines, petroleum ventures, etc. This, in turn, is providing funds in large volume and is lending impetus to new developments which heretofore had to rely largely upon public subscription for working capital. Likewise, individual prospectors who formerly worked as best they could in a small way for themselves, are now finding it possible to secure the financial backing of established mining companies—the prospector usually receiving a substantial salary, plus an interest of 5 to 10 per cent in any discovery made. Properly financed, and in a position to move quickly to areas of special merit, the efficiency of good prospectors has been vastly increased. A new discovery reported possibly a thousand miles away may be reached in a flight of just a few hours by a group of prospectors fully equipped with canoes, tents, outboard motors, etc. The speed with which exploration is now taking place in Canada stands out in sharp contrast to that of the slow motion covered wagon days when the United States was engaged in searching for the mineral deposits of the western states.

The St. Lawrence Seaway

By A. G. THOMSON

Contrary to a widely held belief, the St. Lawrence Seaway project of Canada is scarcely to be considered as a revolutionary and original innovation. Rather, it must be regarded as the continuation of a far-seeing feat of canal engineering which had its initial conceptions in the mid-years of last century. Despite opposition in certain quarters, notably in the United States, the project is rapidly passing through the stage of mere negotiation. Latest reports on the estimated total costs of the scheme indicate a figure in the region of $1,000,000,000. The following article presents a comprehensive summary of the entire Seaway scheme, and indicates that not the least of its potential benefits is the planned development of hydro-electrical power resources.

The project to deepen the St. Lawrence River access to the Great Lakes is said to have suffered more from the enthusiasm of its friends than from the opposition of its enemies. Too often it has been represented as something new and revolutionary, conceived on a scale so immense that the imagination is staggered at its boldness. In actual fact, the proposed developments for which Congressional approval for United States Participation has so long been withheld, represent nothing more than the final link in a chain which has almost been completed. The development of the world's greatest inland waterway has been in progress for well over a century, with beneficial results for both Canada and the United States. The existing navigational channels are no longer able to meet the demands placed upon them and will be still less capable of carrying the greatly increased traffic which is foreseen. The two principal factors which have made further development of the Great Lakes-St. Lawrence navigation system a matter of considerable urgency are Canada's need for additional hydro-electric power and the development of the great iron ore project on the Quebec-Labrador border, which will have its outlet on the Gulf of the St. Lawrence.

THE SEAWAY AIDS THE STEEL INDUSTRY

Some $250,000,000 are at present being spent on the development of Labrador ores, and according to the Canadian Minister of Transport, Mr. Lionel Chevrier, the initial target for shipments is 10,000,000 tons a year. This undertaking includes a railroad 350 miles long from the deposits to Seven Islands, which is scheduled for completion next year, together with extensive harbour construction, but without the deep-water development important markets for the ores are out of reach. Reserves in the Lake Superior region of the United States, which for years has supplied four-fifths of U.S. iron ore needs, were heavily drawn upon during the Second World War. Production can no longer keep pace with demand and the remaining reserves, though extensive, are becoming less easy to mine and more costly. Additional supplies might come partly from costly workings of high-grade ore, partly from the still more costly development of taconite and other low-grade iron formations, and partly from imports brought further inland with higher transportation charges. Mr. Chevrier has stated that without the Seaway there is likely to be an addition of something like $200,000,000 a year in the cost of raw materials for the steel mills, with an even greater increase in the price of the final steel products.

Bringing Labrador ores to the great ore-consuming areas around the Great Lakes under present conditions involves trans-shipment from ore carriers at Montreal and either a long rail-haul by land or by-passing the rapids of the St. Lawrence by rail or canaller, followed by another trans-shipment to large lake freighters for the rest of the journey. The proposed Seaway would make it possible to transport ore in large carriers all the way, reducing the cost of the all-water route by more than 25 per cent and enabling shipments to be increased four-fold. Labrador ore could then compete at present prices in virtually all the Great Lakes districts. The ore occurs as outcroppings or with very light overburden over vast areas and production could be expanded at low cost to meet any foreseeable demands. The mining interests concerned, which include six U.S. steel and iron ore companies, can visualize an immediate sale for at least 20,000,000 tons a year with a growing market thereafter. Construction of the St. Lawrence Seaway is recommended in the Paley Report ("Resources for Freedom," Vol. II, p. 15) as essential to the movement of ore in quantity from Labrador to mills in the Midwest.

The 27 ft. deep channel which it is proposed to construct would also allow large lake freighters to carry the agricultural produce of the prairies more cheaply to and from their markets in Eastern Canada, and to the transshipment points for ocean-going freighters. The Maritime and Eastern Canadian Provinces would benefit from the low-cost waterborne transportation of minerals, timber, paper, agricultural produce, etc., into the heart of the North American Continent. Even British Columbia will be brought closer to the centre of the Continent. The completion in 1951 of an oil pipeline from the Alberta oilfields to Superior, Wisconsin, provides convenient loading facilities for large tankers which, once the Seaway had been built, could carry Canadian oil to the refineries.

The Seaway, as planned, will be able to carry a very large volume of traffic, even though the navigation season is limited to between seven and eight months each year. Penetrating deeply into the whole north-eastern quarter of the North American Continent, the inland waterway afforded by the Great Lake system allows traffic to be carried at the lowest ton-mile rate ever achieved. A channel deep enough to carry the efficient bulk freighters of the Great Lakes would thus represent a contribution of major importance to Canada's rapidly expanding mining and manufacturing industries. Current estimates suggest a yearly volume of traffic for the new waterway, soon after its completion, of 40,000,000 tons or more.

MANY BENEFICIAL FACETS

To Canadian industry and commerce the Seaway means the opening up of the vast commercial system of the Great Lakes to the world's ocean-going vessels. To Ontario it means the continued availability of low-cost electrical power to the people of the Province. Since July, 1950, when hostilities started in Korea, demands for power in Ontario have been about five times the original long-term average. If Hydro—one of the largest publicly owned electrical utilities—is to continue supplying low-cost energy, it must have St. Lawrence power soon. The only alternative is steam generation and the development of uneconomic power sites far removed from Ontario's centres of heavy load. Over a period the rate of flow of the St. Lawrence has averaged 237,000 cu. ft. per sec. Thanks to the steadying influence of the Great Lakes the river is of exceptionally regular habits, and this has created very special possibilities for the cheap generation of hydro-electric power. With its

drop of over 600 ft. the Great Lakes-St. Lawrence System is capable of developing economically perhaps 9,000,000 h.p., two-thirds of which would be Canadian. So far only a fraction of the available 5,500,000 h.p. in the St. Lawrence River has been put to use. The project, when completed, will mean the harnessing of nearly 3,500,000 additional units of horse power. Installations totalling about 2,200,000 h.p. will be erected in the International Rapids Section, situated between Ontario and New York State.

In so far as the Province of Quebec is concerned, Mr. Chevrier pointed out to the Purchasing Agents Association of Montreal during March that construction of the Seaway offered Quebec "a golden opportunity to harness 1,200,000 h.p. now running to waste in the Lachine Rapids." Regardless of the decision on Lachine power, however, the Seaway would bring more business to the Port of Montreal.

This swell of business occurred after the completion of the 9 ft. canal system in the 1840 decade and again following completion of the 14 ft. canals at the end of the last century. Mr. Chevrier considered that history would repeat itself when the 27 ft. Seaway had been completed, as the project was merely a "logical continuation of Canadian policy respecting water transportation." The Minister recently estimated savings in operational costs to shipping utilizing the completed Seaway as possibly not less than $48,000,000 per annum. Since the annual amount to be raised from tolls may not considerably exceed $17,000,000 or $18,000,000 the net saving in transportation costs must thus be regarded as substantial.

HISTORY OF THE PROJECT

Over one half of the water-borne commerce of Canada and one quarter of that of the United States is already carried on the Great Lakes and the St. Lawrence River. More traffic passes through the locks at Sault St. Marie in a season than pass in 12 months through the Panama, Suez, Manchester and Kiel canals together. The history of this mighty waterway goes as far back as the days of the fur traders. As early as 1700 work was started on the construction of an 18 in. waterway to by-pass the turbulent rapids of the St. Lawrence at Lachine, but this project was never completed. By 1850, with the building of the old Welland Canal to carry navigation around Niagara Falls and the construction of a uniform series of canals from Montreal to Kingston, 9 ft. navigation for steamers and sailing boats had been achieved as far as Sault St. Marie. The following half century saw the construction of locks at the Sault, the further deepening of the Welland Canal, and the enlargement of the St. Lawrence canals to their present depth, so that early in this century there was 14 ft. navigation from tidewater to the head of the Lakes.

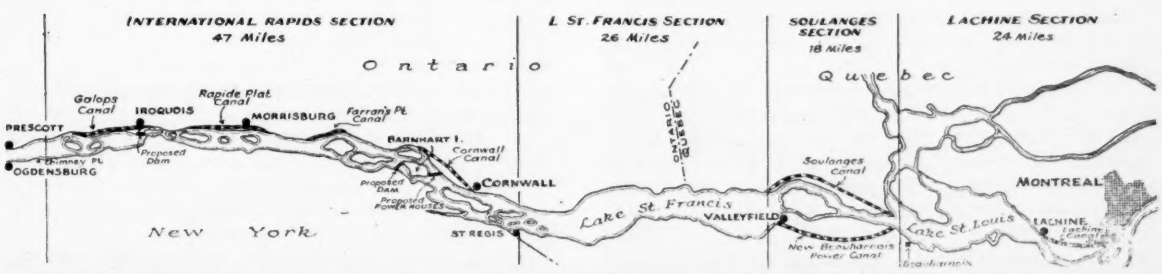
By that time the dream of opening the Lakes to large ocean ships had been born and during the last half century much progress has been made towards its realization. The proposed Seaway is a 1,200 mile channel, 27 ft. or more in depth, extending form Montreal to the head of the Lakes. Together with the St. Lawrence Ship Channel, already provided by Canada, it will permit large vessels to navigate more than 2,000 miles from the Atlantic Ocean to the heart of the North American Continent. The completion by Canada in 1932 of the Welland Ship Canal was an important step towards this goal; another was the construction of the MacArthur Lock at Sault Ste. Marie by the United States during the Second World War. To provide 27 ft. navigation through the entire waterway all that now remains to be done, in addition to the deepening of existing channels, is to construct about 40 miles of canals with seven locks and eight movable bridges in the 115 mile bottleneck between Prescott and Montreal, where the existing canals have a limiting depth of 14 ft.

U.S. - CANADIAN NEGOTIATIONS

The construction of a deep-draft waterway linking the Great Lakes with the Atlantic Ocean has interested the governments of both countries since 1895, and for more than 30 years the combined navigation and power project has been the subject of negotiation between the two countries. Every U.S. Administration since that of President Woodrow Wilson has favoured immediate construction of the Seaway and since 1928 every Canadian Government has given the plan active support. In 1932, a Treaty was negotiated between the two countries providing for the joint development of the combined project, but after extended hearings in the U.S. Senate it failed to obtain the two-thirds majority necessary for ratification. Further negotiations which were begun the following year resulted in the drawing up of the Great Lakes-St. Lawrence Basin Agreement in 1941, but repeated efforts have failed to obtain favourable consideration by the U.S. Congress.

In 1948, the Governments of the State of New York and the Province of Ontario tried to get permision to proceed with the power development scheme alone in order to overcome the serious shortages of electrical power with which they were faced, but the U.S. authorities refused permisison, fearing that separate construction of the power facilities would mean indefinite postponement of the Seaway.

Canada's decision to proceed alone with the navigational part of the project, and the concession made by the United States last year in submitting the power proposal to the International Joint Commission, both stem from the reluctant conclusion that there is little prospect of obtaining Congressional approval for joint U.S. Canadian participation in the St. Lawrence Seaway and Power Project. Nevertheless, the St. Lawrence Seaway Authority, established by a Statute enacted by the Canadian Parliament on December 12, 1951, is empowered to construct and maintain the Seaway either as an all-Canadian undertaking or jointly with the United States, so that the door has been left open as long as possible for U.S. participation. Another Statute provides for the construction by the Province of Ontario,



A Canadian Department of Transport map showing the location of the present St. Lawrence canals and of the proposed dams and power installations. Under the Seaway project, the shore line would be considerably altered and canals and locks would be built as follows: International Rapids section, canal with lock to by-pass dam near Iroquois and canal with two locks just above Cornwall; Soulanges section, twin locks at lower end of New Beauharnois power canal which forms part of Seaway; Lachine section, canal with two locks at entrance to Montreal harbour.

in co-operation with the appropriate body in the United States, of the power development in the International Rapids Section of the St. Lawrence River.

In October last year the International Joint Commission announced its approval of the joint Canadian-U.S. application for permission for designated agencies to build $450,000,000 worth of power installations on the St. Lawrence near Cornwall. Only the naming of an agency by the U.S. Government is needed before construction of the power works can be started.

Mr. Chevrier recently announced that the Canadian Government intended to start on the construction of the St. Lawrence Seaway power project this year and he estimated the combined cost of the hydro and navigation schemes at the revised figure of $750,000,000. As a first step the removal of Gut Dam, a controversial structure in the St. Lawrence River, blamed by some experts for the high water levels of the Great Lakes, has already been carried out.

Supporting arguments were raised in the United States by Mr. John Burton, chairman of the New York Power Authority, late last year when he pointed out that if the Seaway became factual, New York State could save $95,000,000 per annum. This sum would be composed of $32,000,000 saved on hydro-electric power expenditure, $40,500,000 on public development of this power, and $22,500,000 through the development of an integrated power system.

Mr. Chevrier, in the meantime, has stated that among the steps taken by Canada to expedite the Seaway plan are first, to waive the requirement to provide works to continue the present 14 ft. navigation or make a cash payment of approximately $14,000,000 in lieu thereof, since new and deeper canals on the Canadian shore would render as unnecessary the existing 14 ft. canals; second, to contribute $15,000,000 towards the cost of channel enlargements by the entities developing power, in consideration of the benefit that will occur to navigation in a completely Canadian seaway; and third, Canada and Ontario together have offered to supply the Aluminium Company of America with power for its Massena plant during the construction period, as this aspect was a matter of concern to the company, which draws power from a smaller development of the river and feared an interruption of operations.

Meanwhile, it was reported from Ottawa in late March that President Eisenhower's announcement favouring participation in the Seaway project has caused spokesmen of the Foreign Affairs and Transport departments to express fears of further delay while proposals are again placed before Congress.

COST AND BENEFITS

If the Seaway scheme were to be carried out under joint partnership between the two countries, as was visualized in the 1941 Agreement, the cost to Canada would be about $220,000,000 and to the United States about $484,000,000 (based on prices ruling in December, 1950). The smaller Canadian share is partly due to the fact that Canada has already expended some $132,000,000 on the Welland Ship Canal, while corresponding expenditure by the United States has been substantially less. If the Seaway project is carried out by Canada alone, the Dominion will not be responsible for carrying out improvements to navigation in the channels between the Upper Lakes, but this saving would be partly offset by the extra cost of routing the navigation channels on the Canadian instead of the U.S. side of the river in the International Rapids Section. The total cost to Canada chargeable to navigation should not exceed $300,000,000. This is a substantial sum, but the project is planned to be self-liquidating. Canada can do any necessary financing herself, and if the new navigation facilities are entirely her own, she will have complete control over tolls and toll revenues. There will also be some $400,000,000 chargeable to power, which will be borne by the Hydro-Electric Power Commission of Ontario and the corresponding U.S. authority in equal amounts. For an all-Canadian scheme the Dominion will have to find about 158,000 tons of steel and 750,000,000 barrels annually for several years, representing about 3 and 5 per cent respectively of her total annual consumption of these materials. Canada is therefore quite capable of carrying out the whole of the Seaway project and her part of the power scheme.

According to the *American Metal Market*, the construction of three proposed dams in the Rapids area is not feasible, under International Law, without approval from both countries. Estimates place the potential output at approximately 6,000,000,000 kWh. or more per year which would be shared equally.

INTEREST TO U.K. MANUFACTURERS

Last month is was reported that three British business men, who represented the Export Group of Constructional Engineers, had left for Canada. The purpose of their mission was to investigate the manner in which the Group can collaborate in the construction of the Seaway and the associated hydro-electric schemes. The representatives concerned are Brigadier A. G. Bonn, a director of Richard Costain, Mr. F. Taylor, chairman and managing director of Taylor Woodrow, and Mr. A. E. Parkinson, chairman of Sir Lindsay Parkinson and Co.

Apart from contracts for the actual work of dredging and excavating the Seaway and for the construction of the hydro-electric power stations, firms of the United Kingdom will have opportunities to obtain orders for the supplying of considerable quantities of plant, machinery and equipment.

The Export Group has been in contact with the Board of Trade on this question for some time, and it is expected that the needs of those firms winning contracts will be regarded sympathetically by the Government.

U.S. opposition to the St. Lawrence Seaway project comes from certain powerful interests such as railways, east coast ports and public utilities, who fear that their own undertakings will be adversely affected. Private power interests in the United States have also been among the opponents of the project. In Canada, the chief opposition came originally from Montreal, which at present has the business of transhipping most of the through freight from ocean vessels to canal vessels or rail. In recent years some of the opposition has begun to dwindle, due to a growing realization that the general stimulus to industrialization will soon bring compensation for any temporary losses that might result from the compensation of large freighters passing freely up and down the St. Lawrence.

Powerful official support for the combined project has been forthcoming in both countries on account of the obvious advantages of the Seaway from the standpoint of defence. While seaborne imports would be highly vulnerable to submarine attack in the event of war, all the necessary ore for the U.S. steel industry could be moved from Labrador in comparatively safe inland waters. Moreover, the Seaway would permit any but the largest of naval and ocean vessels to be built in inland yards. The project would also create a reserve of power in a great industrial area to be drawn on in the emergency and would provide a new transportation route between factory and battlefront, to supplement the hard-pressed railways.

Canada feels that the building of the Seaway and the development of the power can no longer be deferred. It is considered that the project will not merely pay its own way, but will bring benefits to both Canada and the United States which will far outweigh its cost.

Development in the South Wales Coalfield

The following article, received under date April 24 from our coal correspondent, presents a précis of the important developments now taking place in the steam coal area of South Wales. Apart from the obvious increases in tonnage concerned, reconstruction is called for at an impressive scale at Cwm Colliery, and the face of the coal mining industry of the area will be changed by the planned opening of new collieries and the closing down of existing properties.

Important developments are now taking place in South Wales in the steam coal area and work is also about to begin on the new collieries in the anthracite area. The National Coal Board propose to increase the annual output in this Division to 32,000,000 tons, including 6,000,000 tons of anthracite. A large proportion of the future export trade will necessarily be supplied from this coalfield, partly because of the overseas demand for Welsh coals and partly on account of the comparatively low cost of transport from the collieries to the Bristol Channel ports.

DIFFICULT MINING CONDITIONS

Mining conditions are, however, rather difficult in this coalfield and future developments will involve high capital expenditure. The difficulties are particularly great in the anthracite area, where most of the existing mines are old drift workings with obsolete equipment, and where the working costs are the highest in the country. Any fresh start here must be made from scratch and three new collieries have been planned for Cwm Dulais, Cwm Gors and Cwm Gwendraeth, from which valleys the main lines of communication run to Neath, Swansea and Llanelly, respectively. When they are fully developed, these three new collieries will supply the bulk of the annual output of 6,000,000 tons of anthracite and most of the existing mines will then be closed. The very high incidence of pneumoconiosis among anthracite miners created a very serious problem in this area during the inter-war years, and it was here that one of the most effective methods of suppressing dust by water infusion was first applied by the Amalgamated Anthracite Company. This method is now widely used in this country and in some places abroad.

The highest output of anthracite in any one year was 7,126,733 tons in 1934, of which 6,133,934 tons came from South Wales and 992,799 tons from Scotland and well over half of the total output was exported that year. At present the annual output of anthracite is of the order of 3,000,000 tons and the total output of all classes of coal in South Wales is a little under 25,000,000 tons per annum, which is roughly 11 per cent of the national output. The National Coal Board plan to raise the export trade from South Wales ports to between 10,000,000 to 15,000,000 tons a year.

OUTLINE OF THE S. WALES COALFIELD

The South Wales coalfield is in the form of an elongated basin which extends from Pontypool on the east to St. Brides Bay near Carmarthen on the west, and it has a superficial area of about 900 square miles, of which about 400 square miles cover the bituminous coal area, 400 square miles cover the anthracite area and about 100 square miles cover an area where the coal changes gradually from one to the other. An anticlinal ridge brings most of the seams within workable depths towards the centre of the basin and hitherto most of the steam coal has been mined to the north of this ridge because the strata on the south crop are generally steeply inclined and much faulted.

Such conditions now provide opportunities to try out the Continental system of horizon mining in this country and this system has already been put into practice at Llanharan to the north-west of Cardiff and at Nantgarw to the north. The main haulage roadways at both these collieries are being driven through solid rocks from existing shafts which have been deepened for the purpose. These developments are classed as reconstruction schemes and not as new projects.

RECONSTRUCTION AT CWM COLLIERY

One of the largest reconstruction schemes in the country is now in progress at Cwm Colliery in the steam coal area between Pontypridd and Llantrisant. Here the inclination of the strata is generally moderate and is therefore not suitable for the orthodox horizon system but the main roadways are nevertheless being driven in the solid rock underneath the lowest seam to be worked in order to provide a layout for locomotive haulage. The two shafts at this colliery were sunk by the Great Western Colliery Company between 1909 and 1915 to a depth of about 780 yd. The colliery was transferred to the Powell Duffryn Company in 1928 and the workings were then joined to those of the Maritime colliery at Pontypridd.

There are five workable seams in a vertical section of 120 yd. and it is intended to extract them in downward succession and to lower the coal by spiral chutes to the locomotive haulage levels below the bottom seam. The coal from the upper seam will thus have to be passed over the spiral chutes through a vertical height of about 360 ft. The main roadways are being made 16 ft. wide and 13 ft. high since about 750,000 cu. ft. of air per minute will be needed for ventilation. At present coal is being wound at Maritime, Coedely and at Cwm but eventually all the coal will be raised through the shaft at Cwm and this shaft is being equipped with skips to deal with a peak load of 600 tons an hour. The shafts at Coedely and Maritime will still be used for winding men and materials and pithead baths and lamprooms will have to be maintained at the three centres as at present.

THE OPERATING MACHINERY

The maximum output will be 5,500 tons a day and the coal will be brought from the loading points to the shaft in 6-ton mine cars hauled by diesel locomotives of rather unusual design in that they are to be provided with dual controls in a driver's cab at both ends. The cars will be discharged by rotary tipplers at a lower level than the skip loading pockets and the coal will be raised to these pockets by a conveyor. The coal in this area is suitable for the manufacture of high-grade metallurgical coke and is therefore very valuable since the reserves of this class of coal are rapidly dwindling in other parts of the country. It has been estimated that the reserves at Cwm amount to 150,000,000 tons and the colliery should therefore be able to supply about 1,250,000 tons annually for a period of 100 years.

A contract has been placed with the Fraser and Chalmers Engineering Works of The General Electric Company Ltd. by the N.C.B. for a coal preparation plant to be installed at Cwm Colliery. The plant to be supplied will deal with two different grades of coal and comprises two separate units each capable of dealing with an input of 200 tons per hour. Each section includes a Chance washer, the necessary froth flotation and water clarification units.

The contract also includes the interconnecting raw coal and refuse conveyors and bunkers together with a 25-ton Fraser and Chalmers Marshall wagon tippler for handling any foreign coal.

Increased Exportation of British Earth Moving Machinery

The exportation of earth moving machinery manufactured in the United Kingdom has shown a phenomenal rise in value since the end of the Second World War. In the following article, abridged from statistics and a report prepared by the Information Division of the Treasury and presented in *Bulletin For Industry, No. 50*, a monthly review of the economic situation prepared by that body, it is pointed out that latterly increasing United States and West German exports do not allow for British complacency. However, recent statistics suggest that the British industry is not resting on its achievements to date and that it believes in an expanding future overseas.

The main function of the majority of earth-moving equipment units is the moving of spoil for constructional work of all types and the mining of open-cast coal, as well as the obvious facilities afforded by the quarrying industry. The size and strength of these equipments is impressive. There are bulldozers of anything up to 150 h.p. and trench-digging machines which cost £4,000 each and perform those operations usually demanding the work of 30 men. Excavators manufactured in the United Kingdom vary in tonnage from those of 8 tons of ¼ cu. yd. capacity to walking draglines of 20 cu. yd. capacity and weighing 1,600 tons, utilized in iron ore mining.

THE GROWTH IN OUTPUT

More than 200 firms in the United Kingdom manufacture contractors' plant, employing a total labour force of approximately 25,000 persons. Since 1948 some 500,000 sq. ft. of new floor space, costing over £1,000,000, and considerable quantities of new plant and machine tools have been added to the productive capacity of the industry.

In 1935, when total output amounted to only £2,000,000, production was mainly of the smaller sizes of excavators below 1¼ cu. yd. Immediately after the second world war, however, production was commenced on several new machines mainly based on American designs. From a total value of nearly £23,000,000 in 1948, production of the industry rose to £48,000,000 in 1952, an approximate increase of 24:1 in value and 8:1 in volume since pre-war days.

The greatest increase has been in the production of earth-moving machinery, of which few units were manufactured in this country before the war.

	1948		1952	
	Production (£000,000)	*Exports* (£000,000)	*Production* (£000,000)	*Exports* (£000,000)
Excavating	7.5	2.5	13.9	6.6
Earth-moving, including crawler tractors	4.1	1.8	14.6	7.4
Quarry, crushing and screening plant ..	2.2	0.8	3.7	1.6
Road making and maintenance ..	4.2	2.0	5.3	2.7
Concrete mixing and handling	3.7	1.5	6.0	2.3
Pile driving and well drilling	0.9	0.6	1.8	1.1
Spare parts for U.S. crawler tractors ..	—	—	2.7	0.9

Sales in overseas countries have kept pace with an increasing production. In every year since 1948, exports have exceeded 40 per cent of output, rising in value from over £9,000,000 to almost £23,000,000, and in the main being sent to the sterling Commonwealth in an effort to save rather than earn dollars. Australia has been a particularly important market, having instigated a tenfold increase in the value of her purchases of British earth-moving equipment within the past five years. The import restrictions, imposed in 1952, have added difficulties from the point of view of the United Kingdom exporter.

The following table shows the exports of United Kingdom excavating and earth-moving machinery in terms of £000,000's during the last five years. The statistics presented include exports of second-hand equipment.

	1948	1949	1950	1951	1952
Total	5.01	7.94	7.86	9.84	14.26
Commonwealth ..	2.51	4.12	3.87	5.31	7.80
Australia	.21	1.04	1.21	1.81	2.07
India	—	.13	.42	.69	.79
New Zealand ..	.14	.25	.39	.57	.77
S. Africa	.39	.24	.24	.49	.65

The United Kingdom provided 44 per cent of Australian importations of contractors' plant. Less than 1 per cent of last year's exports were delivered to North America, although good prospects exist in Canada where, despite the fact that the United States currently provides 90 per cent of earth-moving machinery requirements, sales of these equipments from the United Kingdom have increased from £38,400 value in 1948 to an annual rate in excess of £480,000 value during the first eleven months of last year.

A SAVING IN DOLLARS

The increased production reported has resulted in a substantial saving in dollars to the United Kingdom. In 1947 a Government mission to the United States bought 367 excavators for open-cast mining at a cost of approximately $15,000,000, but it is now not necessary to make purchases on so vast a scale as British manufacturers are now able to provide nearly all the plant necessary. Total imports of excavators and earth-moving machinery have declined in value from nearly £5,000,000 in 1948 to £1,700,000 in 1952.

Some recent developments will play an important role in the expansion of export sales. The United Kingdom is currently producing a wide range of crawler tractors, including the heaviest types fitted with ancillary equipments. Production of the heavier types of rear dumpers was commenced in Scotland during 1950 by an American subsidiary. This production will not only make Britain independent of dollar imports of these machines, but should in addition provide a good selling market abroad. Exports of dumpers and dump trucks amounted to £2,700,000 in 1952 compared with £1,000,000 in 1950.

Other recent developments include the production in the United Kingdom of motor or road graders for which the export demand is expected to be large, particularly in Canada, and the further interesting export project of a mobile crushing and screening plant which can handle up to 40 tons of rock an hour.

Over the whole field of mechanical and vehicular engineering, this country has maintained a satisfactory position since 1948, despite strong competition from the United States and in latter years from Western Germany. Yet preliminary statistics suggest that for the first half of 1952, when United Kingdom exports displayed a tendency to fall, both United States and German exports showed some increases.

World demand for machinery is generally high, but manufacturing capacity is also increasing rapidly. In these circumstances the share won by the United Kingdom in the export market depends on its competitive power, for as delivery dates shorten, price will become the increasingly decisive factor.

MACHINERY AND EQUIPMENT

Tub Straightening and Rectifying Equipment

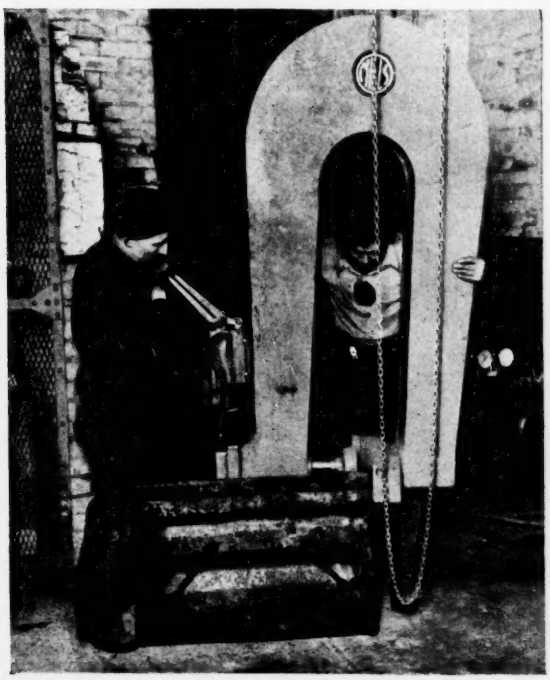
Tub straightening and rectifying equipment is announced by the manufacturers, John Mills and Co. (Llanidloes) Ltd., as an addition to their range of mining equipment. The equipment under notice comprises the "Oilaulic" pumping unit, and the stretcher and straightener units.

The "Oilaulic" pumping unit itself comprises two high-speed high-pressure pumps and two low-pressure pumps in tandem, enabling the stretcher and straightener to be operated either simultaneously or independently. The pumps are mounted in one tank and are driven by a 5 h.p. 960 r.p.m. protected type continuously rated motor. The pump unit and motor are mounted on a common fabricated base, the former being equipped with separate pressure gauges for the straightener and stretcher units.

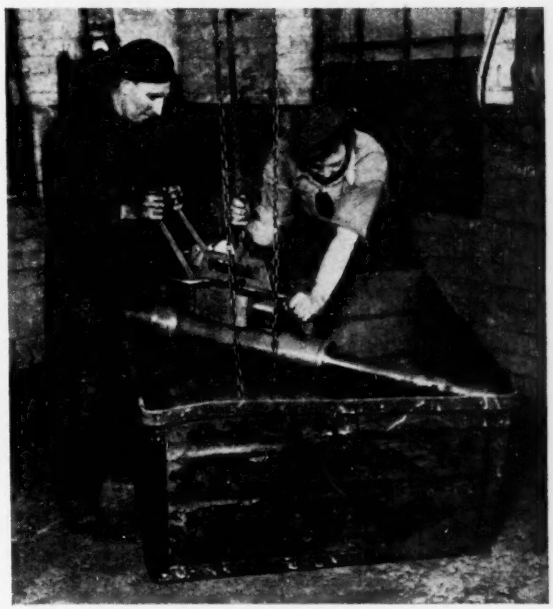
An auto-unloading and retaining valve enables the straightener to be held on load for any required period of time, a factor which is particularly useful when the unit is used for clamping while riveting operations and like duties are being performed. The leads applied by the straightener and stretcher units are adjustable from 0 tons to a maximum of 10 tons, and both hydraulic systems are protected from overload by factory set relief valves. The straightener and stretcher units are connected to the pump by means of armoured high-pressure flexible hose.

The straightener unit is operated by lowering it over the bent side of the tub and straightening that side. Either convex or concave sides may be straightened by reversing the beam and anvil. Tubs and mine cars with an inside depth of a maximum of 3 ft. 6 in. can be straightened by means of this equipment.

The stretcher is essentially a double acting hydraulic cylinder, fitted with a lifting device and control valve. In operation, the stretcher is lowered inside the tub diagonally across the corners, and the load applied. By this means collapsed tubs can be opened out and the corners made square. If required, a lock and release load can be fitted to enable the load to be held for any desired period of time. This latter feature is built into a stretcher cylinder head which is interchangeable with the solid head normally supplied.



The straightener unit



The stretcher equipment

The stroke of the stretcher unit is 1 ft. 6 in. and quickly detachable extension pieces are supplied to obtain a maximum reach of 9 ft. 6 in. The stroke and maximum reach of this machine and the number and lengths of the extension pieces can, however, be modified as required.

The photographic illustrations show tubs of the smaller type being rectified. It is usual for one operative to operate the straightener and another to operate the stretcher.

A New Economy Engine

In introducing the new Cost-Cutter engine for their 2- and 3-ton Thames commercial vehicle, Ford Motor Co. Ltd. have taken an important step in helping to reduce road transport costs. Hitherto, most commercial vehicles in these pay-load classes have been powered by engines which have been designed primarily for larger capacity vehicles, consequently operating costs have been higher than necessary. The Cost-Cutter engine has been produced specially to provide highly efficient and economical power in the 2-3 ton range. It is estimated that at least one-fifth of the total number of commercial vehicles on the roads of Great Britain to-day come within this class. Heavier Thames vehicles will continue to be powered by the Ford V8 engine, or alternatively the Perkins P6 diesel engine.

The Cost-Cutter will go into production immediately. It is a 4-cylinder, overhead valve, petrol engine which develops 70 b.h.p. at 2,800 r.p.m. Production of all Thames commercial vehicles will shortly be accommodated in a new 300,000 sq. ft. two-floor building which has recently been completed.

Petrol Engine Modified to Tractor Vaporizing Oil

The Lister 1½/2 h.p. D type petrol engine has been modified to run on tractor vaporizing oil and a conversion kit for those petrol engines at present in use is now available, according to an announcement by the manufacturers, R. A. Lister and Co. Ltd. Paraffin must not be utilized in the starting and running of the D type vaporizing oil engine, and it is estimated that the use of vaporizing oil will effect a saving of up to two-thirds in fuel costs, estimated at a maximum of 13s. 4d. in the £.

Principal statistics show that at 1½ h.p. the engine develops 800 r.p.m., and at 2 h.p. the development is 1,100 r.p.m. The cylinder is 3 in. by 3in. bore by stroke, with fuel consumption at

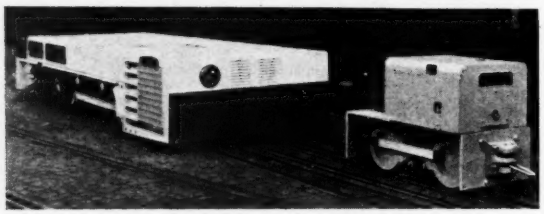
.75 pints b.h.p./hr., and lubricating oil consumption of .005 pints b.h.p./hr. Fuel tank capacity is 1 gallon, water tank capacity 24 gallons, hopper capacity 8 pints, and radiator capacity 12 pints. The flywheel at 800 r.p.m. stands at 13 in. by 2¾ in. and at 1,100 r.p.m. 12 in. by 2¾ in. The pulley is standard at 5 in. by 4½ in.

The lubrication is automatic to all enclosed working parts and the governor gives accurate control of speed. The manufacturers advise the use of lubricating oil of S.A.E. 30 standard. The engine is presented as being able to develop its rated h.p. for eight hours continuously and is subject to the following allowances when calculating net h.p.: Altitude, a reduction of 4 per cent for every 1,000 ft. above 330 ft. above sea level; temperature, a reduction of 1 per cent for every 5 deg. F. above 65 deg. F.

A Revolutionary Mines Diesel Locomotive

A striking advance in heavy haulage equipment for coal mines has been effected by the Hunslet Engine Co. Ltd. in its laest fully-flameproof mines diesel locomotive. Although its 170 b.h.p. represent 70 per cent more power installed than large locomotives hitherto at work, despite this great increase in power it is, at 39 in. height, claimed the lowest diesel mines locomotive, being 15 in. or more lower than several models of 15 to 40 b.h.p. This feature, giving the locomotive its most striking appearance, has been obtained by a third new factor, the use of a horizontal oil engine, the first time a modern quick-running lightweight horizontal oil engine has been used in mines practice.

Designed specially for the U.S. market, the width of this particular model, 7 ft., is acceptable in American practice, for it is the custom there to cut only the coal seam and not the



The largest and smallest Hunslet mines diesel locomotives, the 37,000 lb. and 6,000 lb. units

stone above and below, so that a characteristic of the roadways is abnormally low height coupled with extreme width.

Robustness of construction is the keynote of the mechanical portion. The frame structure is built up of three main steel castings plus steel plate sections welded up into one piece, and this carries engine and gearbox by direct mounting. Steel castings are used also for the wheel centres, which are surrounded by steel tyres 24 in. dia. on tread. Axleboxes are of the S.K.F. roller type. Tecalemit grease nipples are installed for the general lubrication of the mechanical portion. The whole of the machinery is covered in steel casing plates, made in sections for easy removal.

A Cummins four-stroke engine was chosen for wide servicing, with spare parts facilities for it offered throughout the U.S., and because of all horizontal models available it showed best specific fuel consumption and combustion, and consequently has an exhaust with the smallest possible proportion of CO. The engine is of Cummins NHHB1-600 type, with six 5⅛ in. by 6 in. cylinders giving a top output of 200 b.h.p. at 2,100 r.p.m., but in this installation with fuel injection set to give a top output of 170 b.h.p. at 2,100 r.p.m. The six cylinders are in a single bank, and to suit the space available the crankshaft centre line is offset from the locomotive centre line. Cummins's own DD fuel injection system is fitted. The engine dry weight is about 2,300 lb., or 13½ lb. per b.h.p. on the 170 b.h.p. setting; its overall dimensions are 64 in. long by 55 in. wide by 23 in. high.

Auxiliaries are all belt driven from an auxiliary gearbox which is itself driven by a forward prolongation of the engine shaft. The water and engine oil radiators are of Serck elements with Hunslet headers and are in two groups, one at each side at the forward end of the locomotive. Compressed air for engine starting, brakes, sanding and whistle is furnished by a two-cylinder single-stage Bendix-Westinghouse compressor, belt-driven, and with a capacity of 12 cu. ft. min. at 90/110 lb. pressure. For reasons of space three Air-Maze oil-bath filters have been fitted in this locomotive.

To comply with the safety requirements of the U.S. Bureau of Mines, the engine is replete with additions above the standard installation. The exhaust passes through a conditioner of the Hunslet patent jet type with venturi attachment. This conditioner box is of stainless steel, and to eliminate any fire risk is covered with asbestos and housed in a complete cover sheet of steel.

Even this equipment is not enough to comply with Bureau of Mines requirements. The air inlet manifolds have adaptors fitted, and piped to an automatic vacuum valve which operates a warning whistle when the vacuum becomes excessive, and the hand-operated throttle is fitted with inter-connecting links to a slide valve in the air inlet in such a manner that the slide valves can only be closed when the engine is shut down. American requirements as to flameproofing are much the same as those of the Buxton testing station of the British Ministry of Fuel and Power, and stainless steel flame traps are fitted to both intake and exhaust systems.

This is a diesel-mechanical locomotive, and the drive line comprises the locomotive maker's own friction main clutch; a Hunslet four-speed gearbox with preselective hand-operated air-assisted speed changes; a jackshaft carrying the reversing bevels, and running on S.K.F. roller bearings; and rod drive to the wheels. The four gear steps give track speeds of 5½, 7, 9½ and 14 m.p.h., with respective tractive efforts of 11,000, 7,500, 5,700 and 3,850 lb. Weight in working order with 30 Imp. gal. of fuel in the tanks is 37,000 lb. (16½ l.tons). On the 3 ft. 6 in. gauge curves of 100 ft. radius can be traversed smoothly. Hand and Westinghouse straight air brakes are included, and provision is made for installing the automatic brake for the train.

Exhibits at the Physical Society Exhibition

At the Physical Society Exhibition, 1953, held in the Imperial College, South Kensington, a full range of the pumps and vacuum measuring instruments manufactured by W. Edwards and Co. (London) Ltd. was displayed. The units included rotary vacuum pumps capable of reaching pressures of the order of 10^{-4} mm. of mercury and with capacities ranging from 32 to 450 litres per min. Water jet pumps are available in metal and plastic. In the range of vapour pumps, the diffusion pump is utilized for obtaining the lowest pressure of the order 10^{-6} mm. of mercury or better, and a wide range of diffusion pumps with capacities of 10 to 12,000 litres per sec. are manufactured by the company. At the exhibition there was demonstrated a four-stage mercury diffusion pump capable of working a high speed against very high backing pressures with moderate heater input (75 litres/sec. with a limited backing pressure of 35 mm. of mercury at an input of 850 watts) and backed by a newly designed plastic water jet pump. This latter unit incorporates a ball valve so that vacuum is maintained.

Among the other pumps shown was the booster-vapour pump, and the manufacturers claim that this range provides an important development. These new oil-operated vapour booster pumps have high pumping speeds over a wide pressure range approximately from 10^{-4} to 0.1 mm. of mercury and operate against backing pressures as high as 2-3 mm. of mercury, thus allowing backing pumps of moderate size to be employed. They are particularly useful for excavating vacuum furnaces or casting plant, vacuum drying plant or outgassing plant. Two sizes of this range were displayed, with maximum throughputs of 18,000 and 80,000 litres micron/sec. respectively, and with limiting fore pressures of 2-3 mm. of mercury.

The manufacturers' range of vacuum measuring instruments covers the whole range from 10^{-8} to 760 mm. of mercury. It includes the thermionic ionization gauge, the thermal gauge of Pirani type, the McLeod gauge, the bench type Vacustat, dial gauges and liquid manometers.

The deposition of thin films on metallic and non-metallic surfaces by vacuum coating methods is now extensively employed in the laboratory and in industry, and at the exhibition the manufacturers displayed a wide range of coating plant which fully covered the two vacuum coating techniques called evaporation and sputtering.

METALS, MINERALS AND ALLOYS

COPPER.—The most important news this week was the announcement by Sir Arthur Salter on behalf of the Minister of Materials, Mr. Duncan Sandys, in the House of Commons on Monday that the Government had decided to restore private trading in copper at the earliest practicable date, and that from August 5 the private import and sale of copper would be permitted and the copper distribution orders revoked, thus further implementing the Government's pre-election promise to remove all controls as soon as possible. He added that the London Metal Exchange would be open for dealings on the same day. Private contracts for the delivery of metal after the end of public trading was also authorized; presumably therefore contracts for future delivery after the relevant date can now be entered into. It is expected that the New York Commodity Exchange will be able to start trading in copper futures on June 1. Commodity Exchange quotations of late for lead, zinc and tin have largely been a reflection of the London Metal Exchange prices and presumably will continue to remain so. The U.S. metal trade papers are reporting copper prices after April 23 without regard to the somewhat unreal figure at which Chilean copper is being quoted. Chilean copper sales are practically confined to the fabricating subsidiaries of Anaconda and Kennecott. This change is of some importance outside the United States as the U.K. control price is now based on the *Engineering and Mining Journal* quotations and will probably remain so until August. Having covered their requirements of refined for May delivery, producers in the U.S. have opened their June delivery books and good demand is reported on the basis of "price at the time of shipment." Flat prices, however, are not meeting with favour. The president of Kennecott, Mr. C. R. Cox, reviewing the current position, said that the demand for copper was still strong with defence requirements absorbing about 30 per cent of the U.S. output of refined, and he anticipated a satisfactory demand for copper for the rest of the year.

In Northern Rhodesia, according to a Reuter message from N'Dola, the Anglo American group appear to have moved more into step with Mr. Prain and the Selection Trust group, as they have both written to the European Mineworkers' Union asking them for a meeting, to discuss the advancement of Africans in the industry, and stating that they wish to reach agreement with the Union on a practical scheme which would at once protect the interests of European mineworkers and at the same time meet the reasonable aspirations of African workers. This joint approach would seem to reflect the probability of the Central African Federation being rapidly implemented. Copper production in Northern Rhodesia in February is reported as 20,885 tons as compared with 24,264 tons in January; the decline was principally in blister. Canadian exports of refined this year showed a marked increase in the first quarter and amounted to 34,657 s.tons compared with 25,189 in the same period of last year; imports to the U.S. and U.K. both increased. The decision of the U.S. Administration to discontinue the stockpiling of copper was denounced by Mr. Sowerwine, Vice-President of Anaconda, on the ground that the stockpile tonnage was "pitifully inadequate."

The premier of Quebec has announced that an early start will be made by Gaspé Copper Mines, a Noranda affiliate, in the erection of a smelter at Holland township, Quebec.

LEAD.—Like its sister metals lead has been rather firmer this week and closed on Wednesday at £80¾ per ton for prompt and £79¾ per ton for forward. The New York price has remained at 12½ c. Closing down of mines and smelters metals continue to be a feature of American news. The American Lead and Zinc Company has closed one of its mines in Tennessee and the San Luis Potosi Smelter of A. S. & R. was closed by a strike last week thus cutting output by some 1,000 tons a week besides about half as much copper.

TIN. — Tin quotations have oscillated wildly since our last issue. On Friday the London price fell by £20 and recovered on Monday by £40 per ton and has recovered further since.

Monday's recovery was promptly reflected in United States' and Continental quotations. The New York price advanced on Tuesday from 93.25/93.75 v. to 98.5/98.75 c. and later to 100/100.5 c. With the advance American business firmed up, considerable activity being reported. Straits shipments in April are reported as 4,798 tons (1,933 tons to the U.S., 1,097 to Europe, 842 to the U.K., 220 to Canada, 334 to Pacific areas, 190 to India, and 182 elsewhere) this brings the exports for the first four months to 22,297 tons compared with 21,347 in the same period last year. Indonesian shipments in March were 2,435 tons making the total for the first quarter 7,092 as compared with 6,446 tons last year. March production figures so far available are Malaya 4,742, Indonesia 2,342, and the Congo 1,087 tons.

There is no fresh news from Bolivia and the authorities there seem to be largely whistling to keep up their spirits. The Vice President of the Bolivian Mining Corporation, Sr. Rosales, who recently returned from Washington told a Press Conference in La Paz last week that Bolivia had reached the limit in the concessions it was prepared to make to conclude a tin sales agreement with the U.S. Notwithstanding this semi-official declaration the Bolivian Ambassador in Washington, Sr. Victor Andrade, told Mr. Thomas Mann, of the State Department that it would shortly reach a settlement with the nationalized tin companies on the compensation plan and that the way would then be clear for negotiating a long term sales contract. It will be interesting to hear what the compensation plan amounts to as the expropriated tin mine owners have little option but to take whatever they are offered. The American authorities like Brer Rabbit are "sayin' nothin'."

The future of the Longhorn smelter has again been under discussion in the United States where the R.F.C. Administrator, Mr. Harry MacDonald, stated that as a result of purchases by the corporation of the Bolivian concentrates accumulated in Pacific Coast ports, and increases in purchases in Thailand, Mexico and Portugal during the fall of last year and since, the Texas City smelter had been operating at the highest rate in its history. With the fall in the price of tin and the excellent stockpile situation the adequacy of industrial supplies was no longer uncertain. He discounted any idea that the smelter would be turned over to The Tin Processing Corporation, and said he did not believe that it lent itself to private ownership or operation, pointing out that Representative Clark Thompson of Texas in a Bill which he had introduced in the House was asking for a 4 per cent tariff.

It is perhaps of some interest to learn that the U.S. Government have withdrawn their restrictions on the use of tin for silk weighting. Tin weighted silks have not been produced in America since 1939 but we have no idea what tin consumption for this purpose may amount to in these days.

ZINC.—Zinc has continued to fluctuate on the Metal Exchange with a rather firmer tone which was paralled by a somewhat improved tone reported from the U.S. where the price remains unchanged at 11 c. per lb. Besides the closing down of properties previously noted Senator Johnson of Colorado expressed the fear that unless prices improve all the mines in the Rocky Mountain area would have to be shut down. In Mexico strikes have closed the Rosita Smelter of the A. S. & R.

At the meeting of the American Zinc Institute last week the general situation of the industry received particular attention and several important papers were read and discussed. Mr. Simon D. Strauss, Vice President of the A. S. & R., dwelt on the serious effects which a flexible tariff on zinc would have on domestic producers as well as consumers, emphasizing the effect of unstable prices especially where zinc met with serious competition from aluminium particularly in the die-cast section. His contention was even more strongly affirmed by the Vice President of Precision Castings Company, Mr. W. J. During, who said that a protective quota price of 15.5 c. per lb. for Prime Western would reduce the consumption of zinc by die-casters by 50-60 per cent within a year, and force the automobile industry—the chief consumer—to abandon zinc as fast as redesigning and re-tooling permitted.

Mr. Howard Young of the American Zinc Sales Company estimated the total consumption in the United States this year at the record figure of some 972,700 s.tons, but with a domestic output of some 940,000 s.tons and a minimum of 180,000 tons imported there promised to be a surplus supply of some 86,000 tons. Of this supply galvanizing should account for 425,000 and

zinc base alloys for 285,000 tons. Previously Mr. Strauss had expressed the opinion that U.S. would maintain its present lead in mine production for many years to come, though it was not self-sufficient. Outside the United States the French African territories should yield some 40-50,000 tons more than in 1952, though other countries were not likely to vary much, according to Mr. R. L. Stubbs of the Zinc Development Association.

Exports of refined zinc from Canada improved in the first quarter of the year to 49,370 s.tons as compared with 48,687 in the same period last year. U.S. consumption of slab in February was 84,098 s.tons against 89,103 in January.

TITANIUM.—The whole U.S. titanium programme is to be re-investigated. The President of the Crane Company, Mr. J. L. Holloway, told shareholders that many of the projected plants could not be built without titanium, and that there was not enough production to meet the requirement.

SILVER.—It is announced that Britain has purchased 100 tons of silver which had been offered by the Japanese authorities and for which she has paid about £1,000,000. The United States were also bidders in dollars but Japan preferred the offer in sterling of which she is said to be short. It is believed that the silver will not be offered on the international market but will be used to augment the internal supply and presumably eventually repay the 88,000,000 odd oz. of lease-lend silver.

Iron and Steel

Maintenance of a high rate of production, and the limitation of the volume of exports has to some extent relieved the shortage of steel. But is has not yet been entirely overcome and in the case of steel plate it is not expected to be overcome for a long time ahead. The gap between the current output of plates and the requirements of ship and tank builders, boiler makers and engineers is so great that it can only be bridged by the provision of additional rolling capacity.

Moreover other classes of steel are also in short supply and few works are able to accept further orders for delivery in the current period. Very shortly output statistics will be adversely affected by the holidays. Whitsuntide, the Coronation festivities, and subsequently the annual summer holidays, must tend to interrupt the steady rhythm of production and delay urgently needed deliveries. The supply of the right types of steel at the right time is still one of the major difficulties of heavy industry. In the export markets the outlook for British steel is improving but the problem is to reconcile the expansion of the export trade with the swollen requirements of the home market. European producers' prices are rising and British makers are in a strong competitive position.

Generally it may be said that producers can readily dispose of maximum outputs. But there is one very dull patch. There has been a marked subsidence in the call for light castings of late. Export orders are scarce and demand for domestic and building castings is very subdued. Thus many of the foundries are working short time and are only buying reduced tonnages of No. 3 iron. Other grades of pig iron however are in strong request. Maximum outputs of basic iron are readily absorbed by the steel plants, and haemetite is wanted in larger tonnages than are at present available. The improvement in scrap supplies is also maintained, but buyers for the steel works are still prepared to purchase unlimited quantities of heavy scrap and to pay maximum prices without demur.

The London Metal Market

(From Our Metal Exchange Correspondent)

It was announced on Monday, May 4, that the Government will cease to supply copper to the trade as from the night of August 4, and that dealings on the London Metal Exchange will commence on August 5, the requisite three months' notice to terminate Government bulk buying having been given to the Rhodesian producers. It is presumed that the Government will supply copper from its stocks to the Market in the early stages in a similar manner to that adopted in the case of the commencement of Market dealings in tin, lead and zinc. It is expected that consumers will continue a cautious buying policy, in view of the widespread idea that, with supplies of metal plentiful, some fall in the price level will occur when dealings on the London Metal Exchange are resumed.

Tin has reacted from the low price recorded at the end of last week, particularly in the East, probably influenced to some extent by developments in Indo-China. The increase in the stocks of metal in official warehouses has caused the disappearance of the backwardation, and at the time of writing (Wednesday) a contango is apparent at least on paper. The Eastern price on Thursday morning was equivalent to £792⅞ per ton c.i.f. Europe.

Lead and zinc have also shown some recovery from the weakness of last Friday, and moderate buying has been sufficient to raise prices for both metals. The marked tightness of prompt lead seems to have eased, and although a backwardation of about £1 per ton is still shown in quotations, it may be that this will disappear shortly and be replaced with a contango.

Closing prices and turnovers for the week are given in the following table:

	April 30		May 7	
	Buyers	*Sellers*	*Buyers*	*Sellers*
Tin				
Cash	£715	£720	£770	£775
Three months	£710	£715	£767½	£772½
Settlement	£715		£770	
Week's turnover	550 tons		985 tons	
Lead				
Current month	£78½	£79	£79	£79½
Three months	£77½	£78	£78¾	£79
Week's turnover	5,700 tons		4,950 tons	
Zinc				
Current month	£67	£67½	£68⅛	£68⅜
Three months	£67¾	£68	£68⅛	£68¾
Week's turnover	5,700 tons		5,525 tons	

MAY 7 PRICES

COPPER

Electrolytic .. .. £253 0 0 d/d

TIN, LEAD AND ZINC

(See our London Metal Exchange report for Thursday's prices)

ANTIMONY

English (99%) delivered, 10 cwt. and over .. .. £225 per ton
Crude (70%) .. .. .. £210 per ton
Ore (60% basis) .. .. .. 20s. — 22s. nom. per unit, c.i.f.

NICKEL

99.5% (home trade) .. .. £483 per ton

OTHER METALS

Aluminium, £161 per ton
Bismuth (min. 4 cwt. lots) 17s. lb.
Cadmium (Empire), 14s. 4d. lb.
Chromium, 6s. 5d./7s. 6d. lb.
Cobalt, 20s. lb.
Gold, 248s. f.oz.
Iridium, £60 oz. nom.
Magnesium, 2s. 10½d. lb.
Manganese Metal (96%-98%) £280/£295
Osmiridium, £40 oz. nom.
Osmium, £65/70 oz. nom.
Palladium, £7 15s./£8 10s. oz.
Platinum, £27/£33 5s.
Rhodium, £42 10s. oz.
Ruthenium, £25 oz.
Quicksilver, £70 10s./£71 ex-warehouse
Selenium, 30s. 6d. nom. per lb.
Silver 74d. f.oz. spot and f'd.
Tellurium, 15s./16s. lb.

ORES, ALLOYS, ETC.

Bismuth .. .. 30% 5s. 6d. lb. c.i.f.
20% 3s. 9d. lb. c.i.f.
Chrome Ore—
Rhodesian Metallurgical (lumpy) £14 18s. per ton c.i.f.
„ „ (concentrates) £14 18s. per ton c.i.f.
„ „ Refractory £14 10s. per ton c.i.f.
Baluchistan Metallurgical .. £16 11s. 6d. per ton c.i.f.
Magnesite, ground calcined .. £26 - £27 d/d
Magnesite, Raw .. .. .. £10 - £11 d/d
Molybdenite (85% basis) .. 103s. 10½d. per unit c.i.f.
Wolfram (65%) .. .. .. World buying 310s. - 320s.
„ „ .. .. .. 352s. 6d. Selling
Scheelite .. .. World buying 290s. - 300s.
„ .. .. 342s. 6d. Selling
Tungsten Metal Powder (for steel manufacture) .. .. 25s. 9d. nom. per lb. (home)
Ferro-tungsten .. .. .. 22s. 10d. nom. per lb. (home)
Carbide, 4-cwt. lots .. .. £35 13s. 9d. d/d per ton
Ferro-manganese, home .. .. £49 15s. 0d. per ton
Manganese Ore U.K. (48%-50%) .. .. .. 6s. 1d. per unit
Brass Wire .. .. 2s. 7⅞d. per lb. basis
Brass Tubes, solid drawn .. 2s. 1¼d. per lb. basis

THE MINING MARKETS

(By Our Stock Exchange Correspondent)

The gilt-edged market this week, although somewhat uneven, was basically steady. A further revenue surplus and the improvement in the gold and dollar reserve figures for the sterling area were well received. The two large industrial debenture issues were heavily over-subscribed and with these out of the way more risk capital may come back to other sections of the market.

Kaffirs had a bad week. Forced liquidation of certain shares, mainly in the O.F.S. group, caused all-round falls at the end of dealings for the old account. This particularly applied to many of the older producers and to uranium shares which have recently been carried to high levels by speculative buying. The market, however, was in definitely better shape after this shake out and Wednesday saw the beginnings of a recovery. Disappointment with the West Rand Consolidated figures was again apparent in the price of the shares. Developments are bound to be more gradual than optimists had recently anticipated. Rumours emanating from Johannesburg strongly tip Marievale to be the next announced uranium producer. Central Mining announced a final dividend of 1s. 9d. subject to tax, the same as last year. Gross profits are down at £737,014, a fall of £270,786. The net profit, however, after tax is up at £489,496 against £419,838. As was to be expected, share trading profits fell but income from other sources was maintained. The April Rand returns mostly recorded lower profits. West Driefontein again showed a considerable increase and Stilfontein, St. Helena, Vogelstruisbult and Daggafontein all did well.

In the O.F.S., sharp selling of the Freddies group was the main feature. This is attributed to forced liquidation by weak bulls on an unwilling market and was certainly one of the causes for the general fall in Kaffirs. This weak tendency spread to other O.F.S. mines. It is hoped that Western Holdings will shortly produce an initial milling return. Market interest was also displayed in the decision by the Freddies group to extract ore by the resuing method. It is hoped that this will help to keep mining costs down in very narrow reef bands.

Good announcements by Ashanti, Bibiani and Amalgamated Banket failed to stir the sluggish West African market. Amalgamated Banket hope to complete the Fanti ropeway soon. This will initially save the company £6,000 a month in development expenses and shortly after good quality ore should be brought to the mill. Bibiani report the exposure of 175 ft. of reef on the lowest level of the mine giving a value of 9.2 dwt. over 16 ft. The Ashanti chairman at the meeting expressed satisfaction at the coming lightening of the tax burden and announced that a milling rate of 25,000 tons a month was in sight and that development results continued to be most encouraging.

Diamond shares were all better. Buying coming from Paris, probably due to uncertainty over French currency. This found the market short of stock and squeezed an existing bear position, causing sharp rises.

Copper shares also improved. The start of free metal dealings on August 5 had already been discounted and buyers came in as it became apparent that peace talks in Korea were meeting increasing difficulties.

Eastern tin shares showed little improvement in spite of the firmer metal price. The overall situation in the Far East is still very serious with the Communists advancing through Indo-China to the Siamese border. Authoritative opinion considers that the fall in the metal price may well have gone far enough for the time being. Lower world production is expected during the next few years and disarmament seems as far away as ever. The present metal price may also eliminate some high cost producers. Nigerians were mostly easier. The position of the Cornish mines must remain uncertain with the price of tin at its present level. It is thought that Geevor may be able to make ends meet but that South Crofty may operate at a loss if the price does not improve. The shares of both these mines have fallen back during recent months.

Canadian stocks were all better following the lead of Wall Street. The International Nickel quarterly dividend was maintained at 50 c. a share. Base metal shares in this group rallied sharply.

	Price May 6	+ or — on week
FINANCE		
African & European	2 3/16	—1/16
Anglo American Corpn.	5 5/16	—1/2
Anglo-French	18/3	—3d
Anglo Transvaal Consol.	25/-	.....
Central Mining (£1 shrs.)	31/3	—7 1/2d
Consolidated Goldfields	45/9	—9d
Consol. Mines Selection	24/6	—6d
East Rand Consols	3/1 1/2	—4 1/2d
General Mining	4 1/2	—1/8
H.E. Prop.	41/3	—7 1/2d
Henderson's Transvaal	7/3	—3d
Johnnies	58/9	—2/-
Rand Mines	3 1/16	—1/8
Rand Selection	31/3	—1/3
Strathmore Consol.	36/3	—4/9
Union Corp. (2/6 units)	27/-	—6d
Vereeniging Estates	4	—1/4
Writs	33/6	—1/6
West Wits	45/-	—1/10 1/2
RAND GOLD		
Blyvoors	42/-	—9d
Brakpan	9/9	—1/-
City Deep	21/10 1/2	—7 1/2d
Consol. Main Reef	21/10 1/2	—4/4 1/2
Crown	32/6	—7 1/2d
Daggas	3 1/2	—1/4
Doornfontein	25/6	—9d
Durban Deep	41/3	—1/10 1/2
E. Daggas	16/-	—1/6
E. Geduld .. (4/- units)	36/-	—10 1/2d
E. Rand Props	3	—1/4
Geduld	4 1/8	—1/8
Govt. Areas	13/-	.....
Grootvlei	23/3	—9d
Libanon	11/9	—9d
Luipaards Vlei	26/6	—1/6
Marievale	21/9	—3d
Modderfontein East	18/9	.....
New Kleinfontein	23/1 1/2	—1/3
New Pioneer	21/6	—2/6
Randfontein	42/9	—4/-
Robinson Deep	10/-	.....
Rose Deep	13/9	.....
Simmer & Jack	5/3	—3d
S.A. Lands	26/3	—9d
Springs	5/6	—4 1/2d
Stilfontein	27/9	—1/6
Sub Nigel	2 1/16	—1/8
Van Dyk	8/3	—6d
Venterspost	15/-	—6d
Vlakfontein	15/-	—6d
Vogelstruisbult	33/9	—1/6
West Driefontein	6 3/8	—1/8
W. Rand Consolidated	54/-	—4/1 1/2
Western Reefs	48/-	—2/-
O.F.S.		
Freddies	12/-	—1/-
Freddies N.	11/9	—1/1 1/2
Freddies S.	11/1 1/2	—1/7 1/2
F. S. Geduld	2 1/16	.....
Geoffries	14/10 1/2	—2/7 1/2
Harmony	25/6	—1/6
Loraine	8/3	—1/3
Lydenburg Estates	12/9	—3d
Merriespruit	7/7 1/2	—1 1/2d
Middle Wits	17/3	—1/10 1/2
Ofsits	36/9	—2/7 1/2
President Brand	22/-	—1/6
President Steyn	22/9	—1/10 1/2
St. Helena	12/3	—7 1/2d
Virginia Ord.	13/10 1/2	—4 1/2d
Welkom	20/-	—1/6
Western Holdings	3 1/4	—1/8
WEST AFRICAN GOLD		
Amalgamated Banket	1/6	.....
Ariston	6/4 1/2	—3d
Ashanti	22/-	—9d
Bibiani	6/-	—3d
Bremang	2/4 1/2	.....
G.C. Main Reef	3/9	—1 1/2d
G.C. Selection Trust	6/4 1/2	—6d
Konongo	2/9	—3d
Lyndhurst Deep	1/3	—1 1/2d
Marlu	1/1 1/2	.....
Taquah & Abosso	3/3	—1 1/2d
AUSTRALIAN GOLD		
Boulder Perseverance	2/1 1/2	.....
Gold Mines of Kalgoorlie	10/-	.....
Great Boulder Prop.	7/3 XD	—1 1/2d
Lake View and Star	15/3	+6d
Mount Morgan	16/9	—3d
North Kalgurli	11/9	.....
Sons of Gwalia	6/6	.....
South Kalgurli	7/6	.....
Western Mining	12/4 1/2	+4 1/2d
MISCELLANEOUS GOLD		
Cam and Motor	9/9	+3d
Champion Reef	5/-	.....
Falcon Mines	7/-	—3d
Globe & Phoenix	25/9	.....
G.F. Rhodesian	5/4 1/2	—3d
London & Rhodesian	4/4 1/2	—1 1/2d
Motapa	2/6	.....
Mysore	3/-	.....
Nundydroog	5/9	+1 1/2d
Ooregum	3/-	+3d
Oroville	10/3	.....
MISCELLANEOUS GOLD (contd.)		
St. John d'El Rey	26/3	—9d
Zams	24/4 1/2	—7 1/2d
DIAMONDS & PLATINUM		
Anglo American Inv.	4 1/2	+3/16
Casts	22/3	+9d
Cons. Diam. of S.W.A.	3 1/8	—1/8
De Beers Defd. Bearer	65/9	+4/6
De Beers Pfd. Bearer	14 1/2	.....
Pots Platinum	7/9	.....
Watervaal	13/6	—6d
COPPER		
Chartered	50/1 1/2	+1 1/2d
Esperanza	3/9	—3d
Indian Copper	4/3	—3d
Messina	3 1/4	+1/8
Nchanga	5 1/2	+1/2
Rhod. Anglo-American	45/9	+1/6
Rhod. Katanga	8/4 1/2	—4 1/2d
Rhodesian Selection	13/-	+3d
Rhokana	16 1/2	+1/2
Rio Tinto	21 1/2	+1/2
Roan Antelope	12/- XD	.....
Selection Trust	31/10 1/2	.....
Tanks	55/-	+2/9
Tharsis Sulphur Br.	42/6	—2/6
TIN (Eastern)		
Ayer Hitam	22/3	+4 1/2d
Bangrin	6/3	—7 1/2d
Gopeng	8/3	—9d
Hongkong	7/6	—3d
Ipoh	14/4 1/2	+7 1/2d
Kamunting	8/-	—1/-
Kepong Dredging	4/9	.....
Kinta Tin Mines	10/3	—3d
Malayan Dredging	24/-	—3d
Pahang	13/-	—1/-
Pengkalen	7/3	.....
Petaling	9/10 1/2	—4 1/2d
Rambutan	10/7 1/2	—7 1/2d
Siamese Tin	18/-	—6d
Southern Kinta	13/6	—3d
S. Malayan	22/3	—1/-
S. Tronoh	9/3	—9d
Sungei Kinta	13/1 1/2	—1/10 1/2
Tekka Taiping	5/3	—6d
Tronoh	21/-	—10 1/2d
TIN (Nigerian and Miscellaneous)		
Amalgamated Tin	9/6	—6d
Beralt Tin	25/-	+6d
Bisichi	4/-	—3d
British Tin Inv.	12/9	—3d
Ex-Lands Nigeria	3/10 1/2	—3d
TIN (Nigerian and Miscellaneous) contd.		
Geevor Tin	9/4 1/2	—1 1/2d
Gold & Base Metal	3/10 1/2	—4 1/2d
Jantar Nigeria	13/6	—6d
Jos Tin Area	12/6	—6d
Kaduna Prospectors	2/9	.....
Kaduna Syndicate	2/9	.....
London Tin	4/9	—1 1/2d
United Tin	2/4 1/2	—1 1/2d
SILVER, LEAD, ZINC		
Broken Hill South	41/- XD	—2/9
Burma Mines	1/9	.....
Consol. Zinc	24/9	.....
Lake George	10/-	.....
Mount Isa	33/3	—6d
New Broken Hill	18/9	.....
North Broken Hill	50/6 XD	+6d
Rhodesian Broken Hill	10/3	.....
San Francisco Mines	23/-	+1/9
Uruwira	3/3	.....
MISCELLANEOUS BASE METALS & COAL		
Amal. Collieries of S.A.	45/6	.....
Associated Manganese	44/3	+3/-
Cape Asbestos	21/4 1/2	—6d
C.P. Manganese	53/9	—1/-
Consol. Murchison	25/6	.....
Mashaba	7 1/2d	.....
Natal Navigation	3 1/16	—1/32
Rhod. Monteleo	8/1 1/2	—7 1/2d
Turner & Newall	51/1 1/2	—1/1 1/2
Wankie	15/3	+1/3
Witbank Colliery	3 1/16	+1/8
CANADIAN MINES		
Dome	$36	—1/2
Hollinger	$25 1/2	+1/4
Hudson Bay Mining	$87	+2
International Nickel	$72 1/2	+2 1/2
Mining Corpn. of Canada	£4 1/2	+1/2
Noranda	$125	+3
Quemont	£6 1/2	+1/2
Yukon	4/1 1/2	.....
OIL		
Anglo-Iranian	6	+1/32
Apex	41/3	.....
Attock	27/6	.....
Burmah	48/1 1/2	+1/10 1/2
Canadian Eagle	32/3	+3d
Mexican Eagle	21/-	.....
Shell (bearer)	4 3/32	+1/32
Trinidad Leasehold	25/6	—6d
T.P.D.	22/6 XD	—7 1/2d
Ultramar	23/7 1/2	+1/7 1/2

COMPANY NEWS AND VIEWS

Welkom's Flexible Mining Operations

As a result of the financial arrangement which was completed in the autumn of last year, Welkom Gold Mining disposed of its holdings in President Brand and President Steyn. This was necessary in order to provide funds for a comprehensive capital expenditure programme and obviated the necessity of calling upon shareholders for more money. Part of the scheme was associated with the good offices of the Anglo American Corporation who offered the company loan facilities of £1,500,000 in return for the right to subscribe for 1,000,000 shares at 30s. per share. Welkom's authorized capital has been increased to £2,750,000 in 5s. shares.

Operations last year at the mine resulted in a tonnage of 608,000 tons being milled as against 52,000 the previous year, and gold produced amounted to 106,116 oz. The proceeds brought in £1,353,106, and working profit on mining was £15,139. The monthly tonnage milled was rising steadily until July when a heavy inrush of water occurred in a development end in No. 1 shaft. Effective measures were taken but the occurrence hampered operations and caused some mine disruption. In order to avoid a recurrence of the trouble, a further two levels above the then existing working horizons are being established and the No. 2 shaft deepened. It is hoped to gradually increase the number of stope faces available and add to the flexibility of mining operations.

The intersection of water-bearing fissures affected development and prevented access to the sections of the mine where high values are expected. The footage of work, however, was well in excess of that of the previous year. From the beginning of 1952 to March 31, 1953, 85,391 ft. were accomplished of which 20,240 were on the Basal Reef. Of the 19,780 ft. sampled, 61.93 per cent proved payable averaging 53.30 dwt. A satisfactory ore reserve has been established, and at the end of 1952 it was computed at 974,200 tons, averaging 5.0 dwt.

Sealing Free State Geduld's Water Fissures

Both shafts on the property of Free State Geduld intersected the Basal Reef horizon last year, since when the unexpected inrush of water has retarded work. No. 1 shaft has reached its final depth of 5,517 ft. and is being equipped; development is scheduled to start and it is hoped that a small footage will be accomplished during the current quarter.

It was in the No. 2 shaft where the serious water troubles occurred last year, and the company's 1952 report brings up to date, facts with regard to the method employed to seal off the inrush and deal with the water-bearing fissures. Cementation ranges, concrete plugs and augmented pumping have all been employed, and it is stated that a further mat ledged into the side walls is being thrown across the top of the plug to consolidate this, and the sealing off of the fissures on the upper levels will be undertaken by normal cementation procedure.

It is proposed to develop from the 5,150 ft. level and at a later date to sink an incline to the 5,350 ft. level to connect with the drive from No. 1 shaft. The technical advisers are confident that the water in the fissure can be effectively sealed and that future development operations will not be unduly affected.

The mine is scheduled to produce uranium and residues will be treated at plants being erected at Welkom and President Steyn.

The company offered 1,000,000 reserve shares to shareholders last year at 45s., with options to take up further shares at 55s. The water trouble difficulties have encroached on the company's resources to the extent that it is now necessary to resort to loans from the Anglo American Corporation.

"A" Reef Value at President Steyn

In the comprehensive financial scheme evolved towards the end of last year with the Welkom group of mines, an amount of £4,000,000 was estimated to be required by President Steyn in connection with the reduction plant and development work. It was agreed that the amount should be provided by Anglo American Corporation by way of loans with option to subscribe for "Steyn" shares and secure the issue of Notes. The company has increased its authorized capital to £3,000,000.

The reduction plant on the property with a capacity of 50,000 tons per month was completed towards the end of last year, since when a small tonnage of development rock has been milled in order to carry out metallurgical tests. It has been decided to increase capacity to 125,000 tons per month and work on the extensions is proceeding satisfactorily. It is hoped that the monthly tonnage will reach 50,000 tons at the end of 1953 and that this will be increased gradually until 100,000 tons is reached.

Up to the end of March this year a total of 45,064 ft. of development had been accomplished from both shafts on the property, of which 3,242 ft. were on the Basal Reef. Of the 3,175 ft. sampled, 80 per cent proved payable averaging 65.94 dwt. over 5.96 in., equal to 393 in. dwt. 5,919 ft. remains to be accomplished to effect a connection between the two shafts. Stoping operations will, it is hoped, be available to enable the mine to come to production in the last quarter of 1953.

Western Holdings Progresses

Both mining and surface work at Western Holdings appear to be most satisfactory, judging from the Consulting Engineers' report and Chairman's speech which accompany the 1952 annual report.

The mine is scheduled to start production in the middle of the current year and it is expected that milling will increase steadily until 75,000 tons per month is reached. This is the present capacity of the plant which is being extended to 125,000 tons a month and work on the extension is already in hand. Actual operation of the plant for metallurgical and test purposes started last year on diluted ore from development; it is hoped that by the middle of the year, rock will be sent to the mill from stoping and that it should be possible to declare a small working profit in July.

Underground development footage achieved has been most satisfactory, and although the intersection of water-bearing fissures has at times retarded work, by the end of March last, a total of 49,746 ft. had been driven. Of the 7,280 ft. developed on the Basal reef, 7,155 ft. were sampled and 93.08 per cent proved payable, averaging 107.87 dwt. over 6.12 in., equivalent to 660 in. dwt.

The footwall drive from No. 1 shaft towards the northern boundary has advanced 1,983 ft. since it started last year; it has approximately 3,021 ft. to go before it reaches the boundary where it will be turned to pick up the reef and connect with the drive in the Free State Geduld property. This is expected about the last quarter of the current year.

In addition to its mine, Western Holdings has a portfolio of investments which includes shares in the Presidents, St. Helena, Welkom, etc., added to during the year by its holding in Jeannette Gold. The company also has farms south of the Vaal River.

Income from various sources last year was £18,890, and the excess of expenditure over revenue amounted to £127,354.

Underground Work at President Brand

Although underground work has been done on President Brand, no actual reef development has yet been accomplished. It is, however, expected that this will take place shortly. Good progress has been made with the two shafts. No. 1 has reached its final depth of 4,879 ft. and work started on four separate levels. At the end of March No. 2 shaft had reached a depth of 4,468 ft. and will be stopped at 4,840 ft., and at a later date a sub-vertical shaft will be sunk from the 4,600 ft. level to open up the reef in the southern portion of the mine.

The 1952 annual report states that it is estimated the connection between the shafts on the 4,600 ft. level will be completed towards the middle of 1954 and development from the No. 2 started in the third quarter of 1953.

Work on the reduction plant has proceeded and it is hoped that it will commence for metallurgical and test purposes early in 1954, while production will start shortly afterwards. The capacity is 75,000 tons and it has been decided to increase this to 125,000 tons; this extension has already been ordered.

The mine is scheduled for uranium production from its slimes residues which will be treated at the plants being erected at Welkom and President Steyn. Although it is too early to form any estimates of either tonnages or the additional profit which may accrue, it is hoped that in time this may provide a valuable source of revenue.

In order to put the company in funds, new shares were issued last year in terms of the arrangement made for raising £5,500,000. An issue was made of 2,750,000 new 5s. shares at 17s. 6d., of which 2,500,000 were offered to stockholders on a one-for-three basis; the remainder being subscribed by Anglo American. Subscribers were granted option certificates conferring the right to subscribe for further shares at 22s. 6d. which will bring in the balance of the money.

Loraine Gold's Shaft Sinking Programme

Two shafts are being sunk on Loraine Gold. No. 1 intersected the Basal reef between a depth of 4,805 ft. and 4,818 ft. below the collar and the average of the assays taken at 5 ft. intervals around the perimeter of the shaft gave a value of 65.61 dwt. over a channel width of 5.33 in., equal to 350 in. dwt. This shaft reached its final depth of 5,475 ft. in February of this year. At the end of March, No. 2 shaft, which has to be sunk to a final depth of 5,450 ft., had reached a depth of 4,334 ft. The "B" reef which is about 650 ft. above the Basal reef horizon, was intersected at a depth of 4,156 ft. and 16 sections were sampled around the perimeter giving a value of 13.2 dwt. over 26.4 in., equal to 348 in. dwt. The Basal reef is estimated to be at a depth of 4,800 ft.

Work on the reduction plant with a capacity of 75,000 tons per month has proceeded satisfactorily, and provision has been made for the extensions necessary to increase it, so that 100,000 tons of ore can be treated monthly as the tonnage becomes available.

During the year arrangements were made to finance the company and the Anglo American Corporation agreed to subscribe at par for £5,500,000 Registered 6 per cent Unsecured Notes in two blocks; £3,500,000 in the early part of this year and £2,000,000 on January 1, 1954. Under the proposal the corporation was granted free of consideration, options exercisable up to January 31, 1955, to subscribe at 12s. 6d. per share for 100 Loraine shares for each £100 Notes subscribed. The Notes are redeemable at any time at 102½ per cent on 90 days' notice and any outstanding on August 31, 1962, will be redeemable over the succeeding four years.

New State Areas Continues on Lower Scale

This thirty-year old member of the Johannesburg Consolidated group may soon have to stop milling mine ore though, judging from the 1952 annual report, treatment of the old residues may continue.

Having come within sight of the end of its profitable career and in view of the possible finish of mining operations, the company gave the Minister of Mines three months' notice in May 1952 of its intention to cease work. It has been found practicable, however, to continue on a much lower scale.

Working profit last year, together with revenue received from various sources less sundry items of expenditure, amounted to £37,923, compared with £88,663 for 1951. Revenue received in respect of sales of gold at higher than standard prices was £23,563. Taxation called for £3,104 (£1,630) and after making appropriations, a dividend of 7½d. per share was paid against 1s. 3d. previously, absorbing £47,314. The balance carried forward was £215,829.

Development done on the mine during the year amounted to 7,691 ft. and of the 6,478 ft. sampled, 23.29 per cent proved payable, averaging 10.9 dwt. No development of any consequence now remains to be done on the mine.

Capital Repayments of Wit. Gold

The third reduction of capital of Witwatersrand Gold Mining made to shareholders this year, has brought the shares down to a value of 16s. against 17s. 6d. shown in the balance sheet at December 31, 1952.

The annual report for last year emphasizes the tenuous position of this old member of the "Johnnies" group. It was registered in 1887 in the Transvaal and has had a successful career but is now almost finished. Every effort is being made to increase the grade of the ore milled, but shareholders are warned that the margin between revenue and expenditure is likely in future to be so small that an increase in working costs, or small decrease in grade or tonnage milled, may result in a working loss.

On the milling last year of 717,000 tons, there was a profit of £10,794 while an amount of £25,893 was received in respect of gold premium sales. Gold recovered was 85,349 oz., the yield being 2.381 dwt. per ton. Both the yield and recovery were higher than in the previous year but costs rose by 1s. per ton to 29s. 5d. After meeting the repayment of capital last year of 1s. 6d., which called for £35,222 and £2,578 (against £11,866) for taxation, there was a balance carried forward of £228,482 against £199,208 brought in.

Developments last year amounted to 4,073 ft. and of the 3,840 ft. sampled, 19.5 per cent proved payable averaging 6.2 dwt. Extraction of the South Vertical shaft pillar, which has been proceeding, was nearly completed and work in connection with the recommissioning of the south incline shaft has proceeded satisfactorily. This shaft will be operated during the current year and enable ore to be brought up from a section of the mine previously inaccessible.

Mining Year Book

Mining Year Book of 1953 has just been published by Walter E. Skinner, 20 Copthall Avenue, London, E.C.2, and *The Financial Times*, 72 Coleman Street, E.C.2. This work is compiled each year by Walter E. Skinner, and is an indispensable standard work of reference. Within the pages comprising this 67th issue are complete and up-to-date particulars of 966 companies operating in all parts of the world. The names and addresses of 1,160 mining engineers and mine managers are included, and the companies in the book with which they are connected. The many changes that have taken place in the last year are recorded, and will prove invaluable to those who are connected in any way with the mining industry.

Mining Year Book needs little introduction, and its 596 pages at 31s. 6d. net post free inland and abroad represent a most satisfactory investment.

Company Shorts

Central Mining Results for 1952. — The Central Mining and Investment Corporation in a preliminary statement showing results for 1952 have announced that group profit before taxation amounted to £737,014 compared with £1,007,800. After providing £245,069 (£587,458) for taxation and £2,449 (£504) for minority interests, the balance of profit available to the Corporation for the year was £489,496 (£419,838). Adding the balance brought forward from the previous year, £208,872, the total available was £698,368 (£622,172).

Group income was maintained with the exception of profits on realization of shares. Net Group expenditure was reduced. The provisions for diminution in value of investments chargeable to the profit and loss account were £263,699 (£193,729) and to the investment reserve were £302,252 against £88,292.

At the annual general meeting to be held on June 8 the Corporation will recommend a final dividend of 1s. 9d. per £1 ordinary share, that is, 11.55d. per share net. The corresponding final dividend in 1952 was at the same rate.

The appropriations for the year are summarized in the table below.

	Year 1952	*Year 1951*
Exploration Reserve	—	£36,672
Investment Reserve	£200,000	£100,000
Property Repairs and Renewals Reserve	—	£1,003
Contingencies Reserve	£4,681	—
Preference Dividend (net)	£26,250	£26,250
Interim Ordinary Dividend (net)	£65,625	£65,625
Proposed Final Ordinary Dividend (net)	£192,500	£183,750
Unappropriated Balance	£217,726	£208,872

Marlu Earns More in 1952.—The profit and loss account of Marlu Gold Mining Areas for the year ended September 30, 1952, showed that total income expanded from £525,316 to £595,387. Mine expenditure was higher, £485,158 against £445,259. But after providing for all expenses including £48,096 (£35,919) for depreciation, the year's profit was up by nearly £16,000 at £48,011, the previous year's figure being £32,494. The carry forward at the fiscal year end was £57,425 compared with £5,503.

The report and accounts will be dealt with in detail in next week's issue. Major General W. W. Richards is chairman. Meeting, London, May 29.

ANGLO AMERICAN CORPORATION OF SOUTH AFRICA, LIMITED

(Incorporated in the Union of South Africa)

GOLD-MINING COMPANIES IN THE ORANGE FREE STATE

(All companies mentioned are incorporated in the Union of South Africa)

Extracts from the Statements by Mr. H. F. OPPENHEIMER, Chairman of the Companies

WELKOM GOLD MINING COMPANY LIMITED

In December, 1952, shareholders approved of an increase in the authorized capital of the company from £2,500,000, divided into 10,000,000 shares of 5s. each, to £2,750,000, divided into 11,000,000 shares of 5s. each. This increase was necessary in order that advantage could be taken of the offer from the Anglo American Corporation of £1,500,000 of loan facilities bearing interest at the rate of 6 per cent per annum on amounts drawn. The corporation was granted the right to subscribe at any time prior to December 31, 1957, for up to 1,000,000 shares in your company at the price of 30s. per share, the company being obliged to use any money received in subscription of such shares in repayment of the loan. At the same time the corporation purchased from your company its holding of 800,000 shares in President Steyn Gold Mining Company, Ltd., and 800,000 units of stock in President Brand Gold Mining Company, Ltd., for the sum of £1,500,000. As mentioned in my statement last year, 200,000 shares in the President Steyn Company and 200,000 units of stock in the President Brand Company were also sold earlier in the year, as the result of which £350,000 was raised.

The Commissioner for Inland Revenue has signified his intention of regarding the surplus on the sales of these investments, which amounts to £1,443,156, as income subject to taxation. This will have the effect of bringing forward the date by which the company will have redeemed its capital expenditure for tax purposes and consequently the company will incur a taxation liability on its mining profits earlier than would otherwise have been the case. Your directors contend that this surplus, which has been used to finance capital expenditure, should not be subject to taxation and if, when received, the assessment reflects that the surplus has been regarded as taxable, they intend to contest the Commissioner's ruling.

OPERATIONS DISRUPTED

During the year 1952, 608,000 tons were milled and the proceeds from the sale of gold and other metals amounted to £1,353,106. The working profit on mining was £15,139. The monthly tonnage milled was rising steadily until July, 1952, when a heavy inrush of water occurred in a development end in No. 1 shaft. Although this was effectively sealed by cementation, development was severely hampered and operations at the mine disrupted. These difficulties for some months reduced the tonnage available from stoping and resulted in a reduction in revenue.

To avoid a recurrence of this trouble, a further two levels above the then existing working horizons are being established and in November, 1952, the deepening of No. 2 shaft as a five-compartment shaft was started so as to provide a further three levels from which underground development could be undertaken. This entails deepening the shaft to 3,750 ft. below the surface, or approximately an additional 800 ft. On April 6, 1953, the shaft had reached a depth of 3,470 ft. and an additional level had been established at 3,230 ft. It is hoped in this way to increase the number of stope faces available and to add to the flexibility of mining operations.

INCREASED PUMPING CAPACITY

It has been decided to increase the pumping capacity at the mine to over 7,000,000 gallons a day.

The technical advisers are confident that the profits will show a steady monthly improvement. At the same time the amount of development in excess of that required to maintain the mill which is being charged to capital expenditure will decrease, until in the second half of this year all development work will be included in working costs.

The intersection of water-bearing fissures affected underground development, not only by reducing the footage accomplished but also by preventing access to sections of the mines where, from surface borehole indications, higher values could be expected. From the beginning of 1952 to March 31, 1953, 85,391 ft. of development have been accomplished, of which 20,240 ft. were on the Basal Reef. 19,780 ft. were sampled, and 61.93 per cent proved payable, averaging 53.30 dwt. over 6.96 in., equivalent to 371 in. dwt. A map showing the underground development to the end of 1952 is available to shareholders on application.

A satisfactory ore reserve has been established, and at the year-end the payable ore reserves were estimated at 974,200 tons, with an average assay value of 5.00 dwt. over a stoping width of 50.00 in., equivalent to 250 in. dwt.

CONSTRUCTION OF URANIUM PLANTS

As announced in the Press, it has been decided to construct uranium plants on your property and that of President Steyn Gold Mining Company, Ltd. These plants will treat the slimes residues of any or all of the five mines in the Welkom area administered by the Anglo American Corporation. The amounts treated from each mine will depend on the uranium content of the respective slimes, and, though it is too early to form any estimates of either the tonnages which may be treated from your mine or the additional profit which may accrue to the company, it is hoped that in time this will provide a valuable source of revenue. The plants are already in course of construction and agreements are being entered into between your company and the Export-Import Bank of the United States and the British Ministry of Supply for the provision of loans to cover the cost of the plant on your property. These plants are scheduled to be completed towards the end of 1954.

FREE STATE GEDULD MINES LIMITED

Both shafts on the mine intersected the Basal reef horizon in June last year. In No. 1 shaft the reef was intersected between 4,809 ft. and 4,812 ft. in a zone of very heavy faulting, and exposure was limited to approximately one-eighth of the perimeter of the shaft. The small amount of reef exposed was sampled and averaged 26.48 dwt. over a channel width of 7.14 in., equivalent to 189 in. dwt. No. 2 shaft intersected the Basal reef between 5,399 ft. and 5,425 ft. and the values obtained by sampling around the perimenter of the shaft averaged 46.32 dwt. over a channel width of 13.71 in., equivalent to 635 in. dwt.

No. 1 shaft has now reached its final depth of 5,517 ft. and is at present being equipped. Underground development is scheduled to start almost immediately and it is hoped that a small footage of development on reef will be accomplished during the current quarter.

SERIOUS WATER TROUBLES

In No. 2 shaft serious water troubles have been encountered during the last eight months. Towards the end of July last year water was encountered in the shaft bottom which, although well within the capacity of the pumps, could not be brought under control by the ordinary cementation methods owing to the friability of the shaft walls. Consequently a concrete plug was inserted in the shaft bottom and while it was being allowed to consolidate development was started from the 5,350 ft. level.

Full precautionary drilling of pilot holes from the development ends was carried out, but no indication of heavy water-bearing fissures was obtained. On September 7 a serious inrush of water occurred in one of the development ends and the combined amount of water flowing from the bottom of the shaft and from this source totalled over 80,000 gallons an hour, which was more that could be effectively dealt with by pumping and baling. Cementation ranges were inserted in the development ends before they were abandoned, and it was decided to carry these up to the surface and to allow the shaft to flood to the level of the water table so that by pumping in additional water a reverse flow could be created and cementation of the fissures attempted.

This operation was successfully carried out, and by December 26 the shaft was de-watered to the 5,350 ft. level. Work was immediately started on reinforcing the cementation in the development ends by means of concrete walls. Unfortunately, while this work was in progress the cemented fissures in the development ends broke away and water estimated at 200,000 gallons an hour entered the shaft. The augmented pumping capacity was unable to handle this quantity and it was decided

to repeat the flooding operation and to insert a 100 ft. thick concrete plug from the 5,350 ft. level to the 5,250 ft. level and thus seal off the affected area.

DE-WATERING ACCOMPLISHED

This plug was completed on January 29 and the de-watering has now been accomplished. A further mat ledged into the side walls is being thrown across the top of the plug to consolidate this, and the sealing off of the fissures on the upper levels will be undertaken by normal cementation procedure.

It is proposed to develop from the 5,150 ft. level and at a later date to sink an incline to the 5,350 ft. level to connect with the drive from No. 1 shaft. Pumps capable of handling 200,000 gallons an hour have been installed on the 3,000 ft. level and further pumps are being installed on the lower levels. The technical advisers to the company are confident that the water in the fissure can be effectively sealed and that future development operations will not be unduly affected.

Work on the reduction plant, the capacity of which it has been decided to increase to 125,00 tons per month, has continued satisfactorily throughout the year and it is proposed that the mill should operate on a small scale for metallurgical and plant test purposes, using development rock, during the last quarter of this year.

As announced in the Press, it has been decided to construct uranium plants on the properties of Welkom Gold Mining Company, Ltd., and President Steyn Gold Mining Company, Ltd. These plants will treat the slimes residues of any or all of the five mines in the Welkom area administered by the Anglo American Corporation, which includes your property. The amounts treated from each mine will depend on the uranium content of the respective slimes, and although it is too early to form any estimates of either the tonnages which may be treated from your mine or the additional profit which may accrue to the company, it is hoped that in time this will provide an additional source of revenue. The plants are already in course of construction and are scheduled to be completed towards the end of 1954.

FINANCE

During September, 1952, shareholders were offered 1,000,000 of the company's reserve shares at a price of 45s. per share and subscribers for the new shares were given free options to take up a further share at 55s. for each new share subscribed any time until October 30, 1953. By this means the company raised £2,250,000, and if the options are exercised will receive a further £2,750,000 by October 30, 1953. The money raised by the share issue has been exhausted sooner than was previously expected. The Anglo American Corporation has, however, made available temporary loan facilities to your company bearing interest at a rate of 6 per cent on amounts drawn, which will enable the company to finance operations until October 30, 1953, on which date the options fall due to be exercised. Shareholders will realize that the water difficulties experienced have seriously delayed progress at the mine and will result in additional capital expenditure, which it is, however, at present impossible to forecast. In order to avoid the possibility of your company being short of funds at any time, you will be asked at the extraordinary general meeting to be held immediately after the annual meeting to increase the borrowing powers of the directors from an amount equal to the issued capital to twice the issued capital.

PRESIDENT STEYN GOLD MINING COMPANY LIMITED

The Basal reef was intersected in No. 2 shaft at the end of April, 1952, at a depth of 4,980 ft. below the collar and gave an average assay of 71.56 dwt. over a channel width of 13.50 in., equivalent to 966 in. dwt. This shaft has since been completed to its final depth of 5,074 ft. and development towards the Basal reef was started in the middle of 1952. No footage on reef was accomplished from this shaft during 1952 but, since then, the Basal reef has been intersected on the 4,800 ft. level. By the end of March 165 ft. were sampled and 66.67 per cent proved payable, averaging 66.24 dwt. over 5.95 in., equivalent to 394 in. dwt. The "A" reef, which lies about 650 ft. above the Basal reef, has been intersected on two levels and, during the first quarter of this year, 708 ft. were developed, of which 529 ft. were on reef. 515 ft. were sampled, of which 92.23 per cent proved payable, at 10.35 dwt. over 62.24 in., equivalent to 644 in. dwt. Although it is too early to estimate the tonnage available from the "A" reef, the results achieved are most encouraging and indicate that the so-called subsidiary reefs in the Orange Free State may prove to be a valuable additional source of revenue.

Up to March 31 this year a total of 45,064 ft. of development had been accomplished from both shafts, of which 3,242 ft. were on the Basal reef. The footage sampled totalled 3,175 ft., and of this 80 per cent proved payable, averaging 65.94 dwt. over a channel width of 5.95 in., equivalent to 393 in. dwt.

Work has started from both shafts on the main connecting haulage on the 4,250 ft. level and, by March 31, 3,881 ft. had been driven. 5,919 ft. remained to be accomplished to effect the connection between the two shafts. It is hoped that ore from stoping operations will be available to enable the mine to come to production in the last quarter of 1953.

DEVELOPMENT OPERATIONS

Development operations have been handicapped by the intersection of water-bearing fissures which have required cementation, and it has been decided, as a precautionary measure, to increase the pumping capacity of the mine to over 7,000,000 gallons per day. This equipment will add about £100,000 to the capital expenditure, but it will assist in draining the mine and secure the underground workings.

Work on the erection of the reduction plant, with a capacity of 50,000 tons per month, was completed towards the end of 1952 and, since then, small tonnages of development rock have been milled in order that plant and metallurgical tests might be carried out. As shareholders are aware, it has been decided to increase the capacity of the plant to 125,000 tons per month, and work on the extensions is proceeding satisfactorily. It is hoped that the monthly tonnage milled will reach 50,000 tons at the end of 1953, and that this will be increased gradually until 100,000 tons is reached.

URANIUM PROJECT

As announced in the Press it has been decided to construct two uranium plants; one on your property, and one at Welkom Gold Mining Company, Ltd. These plants will treat the slimes residues of any or all of the five mines in the Welkom area administered by the Anglo American Corporation. The amounts treated from each mine will depend on the uranium content of the respective slimes and, though it is too early to form any estimate of either the tonnage which may be treated from your mine, or the additional profit which may accrue to the company, it is hoped that in time this will provide a valuable source of revenue. The plants are already in course of construction and agreements are being entered into between the company and the Export-Import Bank of the United States and the British Ministry of Supply for the provision of loans to cover the cost of the plant. These plants are scheduled to be completed towards the end of 1954.

During October, 1952, shareholders were advised that an offer had been received from the Anglo American Corporation of South Africa, Ltd., which provided the company with the £4,000,000 required to repay the loan existing at the time and bring the mine to initial production.

The question of the provision of underground refrigeration, which may become necessary as the tonnage sent to the mill is increased, is being investigated.

WESTERN HOLDINGS LIMITED

Your mine is scheduled to start production on a substantial scale in the middle of 1953. It is expected that the milling rate will increase steadily until 75,000 tons per month, for which the existing plant is designed, is reached next year. The technical advisers have now recommended that the capacity of the mill should be extended from 75,000 tons to 125,000 tons a month. The orders for the equipment required have been placed, and work on the extensions is already in hand.

The present borrowing powers of the directors are limited to £3,300,000, of which £2,500,000 is required to cover the existing convertible notes. As it will be necessary, if no delay is to occur in carrying out the extensions to the mill, to arrange for temporary loan facilities to finance this work and the additional underground development during the year, you will be asked at the extraordinary general meeting, to be held immediately after the annual general meeting, to agree to increase the borrowing powers to £4,000,000.

The reduction plant was brought into operation for metallurgical test purposes last year, and diluted ore from development has been treated. It is hoped that by the middle of the year some of the rock sent to the mill will be from stoping operations and it should be possible to declare a small working profit in July.

UNDERGROUND DEVELOPMENT

The underground development footage achieved has been most satisfactory and, although the intersection of water-bearing fissures has at times retarded the speed of this work, by March 31, 1953, a total of 49,746 ft. had been driven. The results of development on the Basal reef have been very good. Of the total of 7,280 ft. developed 7,155 ft. were sampled, and 93.08 per cent proved payable, averaging 107.87 dwt. over 6.12 in., equivalent to 660 in. dwt.

The footwall drive from No. 1 Shaft towards the northern boundary of the company's lease area has advanced 1,983 ft.

since it started during the second quarter of 1952. This drive has approximately 3,021 ft. to go before it reaches the boundary where it will be turned to pick up the reef and connect with the drive in the Free State Geduld property. Owing to the intersection of water and the precautionary cementation necessary, an accurate estimate of the rate of progress cannot be made, but it is hoped that the drive will reach the boundary in the last quarter of the year.

As a result of the experience of other mines in the Free State gold-fields where fissures carrying water under heavy pressure have been encountered, it has been decided to increase the pumping capacity at the mine to 7,000,000 gallons a day.

As announced in the Press it has been decided to construct uranium plants on the properties of Welkom Gold Mining Company, Ltd., and President Steyn Gold Mining Company, Ltd. These plants, which are already in course of construction, will draw residue slimes from all or any of the five mines in the Welkom area administered by the Anglo American Corporation. The amounts treated from each mine will depend on the uranium content of the respective slimes, and it is too early to form any estimates of either the tonnages which may be treated from your mine or the additional profit which might accrue to the company. It is hoped, however, that in time this may provide an additional source of revenue.

LABOUR POSITION

There was a shortage of both European and native labour during the year, but the position has now improved. As regards Europeans, the shortage was alleviated to some extent by the recruitment of artisans overseas. Since the end of the year the number of natives volunteering for work has shown a substantial increase and it is hoped that this will be maintained.

PRESIDENT BRAND GOLD MINING COMPANY LIMITED

No. 1 Shaft intersected the Basal reef at the end of the second quarter of 1952 between 4,335 and 4,350 ft. below the collar and the reef, which was sampled at 5 ft. intervals round the perimeter of the shaft, gave an average assay rate of 69.99 dwt. over a channel width of 6.72 in., equivalent to 470 in. dwt. This shaft has since been completed to its final depth of 4,879 ft., and underground development has started towards reef on four separate levels. During the first quarter of 1953, 1,998 ft. of development were accomplished, and it is expected that some development will be on reef shortly.

No. 2 Shaft which, at the end of March, 1953, had reached a depth of 4,468 ft., will be stopped at 4,840 ft. and at a later date a sub-vertical shaft will be sunk from the 4,600 ft. level to open up the reef in the southern portion of the mine. It is estimated that the connection between the shafts on the 4,600 ft. level will be completed towards the middle of 1954. Development from this shaft is scheduled to start in the third quarter of 1953 and no development on reef can be expected for some time.

Water-bearing fissures were intersected in both shafts and it has been decided to increase the pumping capacity at the mine to 7,000,000 gallons a day.

SATISFACTORY INTERSECTIONS ON BASAL REEF

During 1952, two boreholes were sunk on the company's property to assist in planning underground development and both obtained very satisfactory intersections on the Basal reef. Borehole No. W.8 intersected the Basal reef at a depth of 3,982 ft., which assayed 111.6 dwt. over a true width of 29.15 in., equivalent to 3,253 in. dwt., and Borehole No. W.9 intersected the Basal reef at a depth of 4,597 ft., giving an assay value of 156.19 dwt. over a true width of 7.73 in., equivalent to 1,207 in. dwt.

Work on the reduction plant has proceeded satisfactorily. It is hoped that the plant will be started for metallurgical and test purposes early in 1954, and that production will start shortly afterwards. It has been decided that the capacity of the reduction plant should be increased from 75,000 tons a month to 125,000 tons a month.

As announced in the Press, it has been decided to construct uranium plants on the properties of Welkom Gold Mining Company, Ltd., and President Steyn Gold Mining Company, Ltd. These plants, on which work has already started, will treat the slimes residues of any or all of the five mines in the Welkom area administered by the Anglo American Corporation of South Africa, Ltd. The amounts treated from each mine will depend on the uranium content of the respective slimes, and although it is too early to form any estimates of either the tonnages which may be treated from your mine or the additional profit which may accrue to the company, it is hoped that in time this may provide a valuable source of revenue.

OUTCOME OF NEW ISSUE

During November, 1952, stockholders were offered 2,500,000 of the company's reserve shares of 5s .each at the price of 17s. 6d. per share, and subscribers were given options free of consideration to take up one further share at 22s. 6d. for each new share subscribed at any time up to and including April 30, 1954. This offer was underwritten by the Anglo American Corporation of South Africa, Ltd., which subscribed for an additional 250,000 shares at the time of the offer on the same terms and conditions as stockholders. The corporation has agreed that in the event of any options not being exercised, it will either subscribe for the outstanding shares at 22s. 6d. or make a loan to the company of the amount which would have been so received. By these means the company received £2,406,250, which was sufficient to repay the temporary loans made by the corporation and to finance operations until early this year. The corporation has undertaken to lend the company such money as it may require to April 30, 1954, when a further £3,093,750 will be received from the exercising of the options or by loan as described above.

LORAINE GOLD MINES, LIMITED

In September, 1952, No. 1 Shaft intersected the Basal Reef between a depth of 4,805 ft. and 4,818 ft. below the collar and the average of the assays taken at 5 ft. intervals around the perimeter of the shaft gave the satisfactory value of 65.61 dwt. over a channel width of 5.33 in., equivalent to 350 in. dwt. This shaft reached its final depth of 5,475 ft. on Februaryg 20, 1953, and underground development was started during March. It is expected that underground development on reef will start during the second quarter of this year.

At the end of March, 1953, No. 2 Shaft, which has to be sunk to a final depth of 5,450 ft., had reached a depth of 4,334 ft. The "B" reef, which is about 650 ft. above the Basal Reef horizon, was intersected at a depth of 4,156 ft. Sixteen sections were sampled around the perimeter of the shaft and gave an average value of 13.2 dwt. over a channel width of 26.4 in., equivalent to 348 in. dwt. 75 per cent proved payable, averaging 422 in. dwt.

The Basal Reef is estimated to be at a depth of about 4,800 ft.

Although water-bearing fissures have been intersected, they have not caused the frequent interruptions experienced in other mines in the Free State, but it has been decided as a precautionary measure that the pumping capacity of your mine should be planned to deal with the possibility of encountering large quantities of water. A system is therefore being installed which, when the two shafts are connected, will be capable of dealing with 7,000,000 gallons per day.

Work on a reduction plant with a capacity of 75,000 tons per month has proceeded satisfactorily and provision has been made for the extensions necessary to increase the plant so that 100,000 tons of ore can be treated monthly as the tonnage becomes available.

FINANCE

During January this year, shareholders were advised by circular that an offer had been received from the Anglo American Corporation of South Africa, Ltd., to subscribe at par for £5,500,000 of 6 per cent Registered Unsecured Notes in your company. £3,500,000 of the notes were to be subscribed immediately and the remaining £2,000,000 on January 1, 1954. At the same time the Corporation was to be granted free of consideration Registered Options entitling it at any time up to January 31, 1955, to subscribe at 12s. 6d. per share for one share in the capital of the company for each £1 of notes subscribed. An extraordinary general meeting of shareholders was held on February 13, 1953, and the necessary resolutions were passed and the offer subsequently accepted. At this meeting, a shareholder inquired whether, in view of the increase in the market price of the company's shares since the date on which the offer from the Corporation was announced, shareholders might be allowed to participate in the subscription of the notes with the relevant number of options. Your directors therefore approached the Corporation, who agreed that £500,000 of the notes with corresponding options which, in accordance with the original scheme, would have been taken up by the Corporation, should be made available to shareholders. A further circular was therefore sent to shareholders on March 13 setting out the proposed offer which closes on April 27, 1953. The Anglo American Corporation of South Africa, Ltd., undertook to subscribe for any notes not applied for by shareholders.

The £5,500,000 raised by means of the issues of notes and the £3,437,500 which will be received if the options are exercised will, together with limited temporary borrowing facilities, enable the mine to be brought to production.

Copies of the Annual Reports and Accounts of the above-mentioned companies can be obtained from Anglo American Corporation of South Africa, Limited, 11, Old Jewry, London, E.C.2.

ASHANTI GOLDFIELDS CORPORATION LIMITED

IMPROVED CURRENT OUTPUT

BUDGET TAXATION BENEFITS

The Fifty-Sixth Annual General Meeting of Ashanti Goldfields Corporation Ltd. was held on May 6 in London, **Major General Sir Edward L. Spears, K.B.E., C.B., M.C., F.Inst.D.** (Chairman and Managing Director), presiding.

The following is an extract from his circulated address:

From November 2, 1951, permission was given with effect from October 1 for 40 per cent of our production to be sold on the free market and from May 1, 1952, we were allowed to sell all the gold we produced in this way. The average gross return per oz. since May, 1952, has been £13 8s. 10d., compared with the official price of £12 8s. per fine oz. Our expenses of realization are heavier but the extra return has, to some extent, met our higher working costs.

Though our profits, subject to taxation, have fallen by £224,999 to £850,927, the total charge to taxation is no less than £518,204 compared with £611,500.

Dividends: After taking a further £25,000 for Fixed Assets Replacement Reserve and £14,218 for the Staff Pension Fund we recommend a final dividend of 1s. per unit of stock, making, with the interim dividend of the same amount, a total of 2s. for the year.

I referred last year to the difficulties we had experienced in maintaining gold production. These difficulties were overcome by April, 1952, and we expected to produce 180,000 oz. of gold during the year. These hopes were frustrated by a series of unofficial strikes. It was largely due to this that there was a drop of 22,426 gold oz. produced compared to the previous year. There has been a considerable improvement in recent months.

With the exception of continued good values on No. 27 Level, development work done during the past year did not produce outstanding results. Since the close of the year, however, we have had some encouraging news.

CHAIRMAN'S ADDITIONAL REMARKS

Addressing the meeting, the chairman said: Thanks to the Budget, I feel considerably happier than when I wrote the speech which has been circulated to you. We shall not obtain anything substantial in the way of reliefs in the current year, but in 1954 we shall benefit considerably.

The position at the mine continues to be satisfactory. Output is increasing steadily and the rate of 25,000 tons a month is within sight. The amount of gold produced in the first six months, 89,500 oz. from 136,500 tons treated, is in accordance with our plans. The Eaton-Turner shaft has reached a depth of 800 ft. in good ground, and preparations for hoisting from No. 32 Level in South shaft are well ahead. Development results continue to be most encouraging. On No. 35 Level the third consecutive crosscut since values were first intersected, No. 18 North, showed values of 44 dwt. over a width of 17 ft. and the reef is stronger than on No. 33 Level. The northerly zone in the region of crosscut No. 105 has been proved over a width of 250 ft. at an average width of 44 ft., with values of 7.5 dwt. per ton. At the south end of the drive, values have been exposed over more than 300 ft., and over a width of 40 ft. they average 10.5 dwt. In both cases the lateral development is incomplete and no information is yet available as to how the values extend below No. 12 Level, but on No. 10 Level, which is being driven from Ayeinm to cover these areas, values averaging 10.7 dwt. over a width of 15 ft. have now been reported in crosscut No. 23 North, which is directly above the northerly zone. The general indications are that a considerable tonnage of mineable ore will be developed.

We are continuing development at Sansu. The development of another Level, No. 10, in depth, together with further work near the surface, is considered necessary, and this will take at least a year to complete. Our Consulting Geologist considers that development of the 6th and 9th Levels has proved the continuity of the large sulphidic ore body previously identified at Nos. 7 and 8 Levels. This ore body has not been explored above No. 6 Level.

GOLD COAST SITUATION

As I informed you in my written speech, I found during my visit to the mine in November and December that the situation on the Gold Coast was better than two years ago. The handling of the serious strike last year by Mr. Edwards, our Mines Manager, was beyond all praise. With the full backing of the Board, he took a strong line, and the situation on the mine is actually better than it has been for years.. The satisfactory attitude of our African workers has now been confirmed to me quite lately by one of our African surveyors, Mr. Ocran, now in this country.

The report was adopted.

BIBIANI (1927) LIMITED

STEADY PROGRESS AT THE MINE

CONSERVATION OF RESOURCES ESSENTIAL

The twenty-sixth annual general meeting of Bibiani (1927), Ltd., was held on May 6 at the Chartered Insurance Institute, 20, Aldermanbury, London, E.C., **Major General Sir Edward L. Spears, K.B.E., C.B., M.C., F.Inst.D.** (chairman and managing director), presiding.

The following is an extract from the chairman's circulated address:—

Permission was given for 40 per cent. of the gold we produced to be sold on the free market as from October 1, 1951. This permission was extended from May 1, 1952, to allow 100 per cent. of our production to be sold in this way. The free market price varies but the average received from May to September, 1952, was £13 8s 11d per fine ounce, compared with the official rate of £12 8s 0d. Though our realization expenses are heavier the extra return is very welcome.

Mining costs per ton are again higher, rising by 2s 2d from 35s 6d to 37s 8d. This rise is mainly due to an increase in African wages awarded as from April 1, 1952.

An interim dividend of 3.6d per unit of stock was paid in November, 1952, and we now recommend the payment of a final dividend of 4.8d per unit, making a total of 8.4d for the year. After transferring £25,000 to fixed assets replacement reserve there is a surplus for the year of £17,170 to be carried forward. We regret the need to reduce the dividend, but the results for the year which reflect the higher mining costs and the company's financial position after meeting the essential needs for equipment and development makes this distribution the maximum that we can recommend.

PROGRESS AT THE MINE

The year at the mine was one of steady progress with output comfortably maintained. The lower grade of ore treated was largely offset by the increased tonnage of 363,263 tons, a new high record. The underground stoping position is being steadily improved to provide a greater tonnage to be mined from underground to give an increased gold production. Progress towards this since the close of the year has been good, and from February we expect to maintain a monthy gold output of 6,250 ozs.

Development on No. 18 level has produced a substantial tonnage at a grade above the average of the mine. Work on the internal shaft on this level has been our main concern. This is well in hand, and exploratory work can now be resumed. It has been possible to winze to No. 19 level immediately below values exposed on No. 18. In the first crosscut completed, No. 16 South, ore averaging 9.5 dwts was proved over a width of 26 ft. No. 10 level, where at the close of the year new ore was reported at the north end of the mine over a length of 260 ft. has been continued and a total length of 450 ft of ore averaging 6.3 dwt per ton and 14.5 ft wide has been proved up to date. The continuation of this ore body is now being sought on No. 11 level and if necessary below that. The development of stoping ground on the higher level would, of course, greatly assist the mining programme.

Good progress has also continued in the permanent installations for pumping and winding at the bottom of the mine where the central shaft is now approaching No. 20 level.

In the forest, where a labour shortage was experienced during the past year, the position has recently greatly improved and production during the past few months has enabled us to build stocks to almost the normal level.

Now that conditions in the Colony are more stable, operations at the mine should continue to show the satisfactory progress already reported during the first half of the current year.

I visited the mine in December last and was glad to see for myself the good work done during the year by the mine manager and his staff. The thanks of myself and my colleagues are due to them all.

Generally the progress and prospects of the mine are satisfactory, but as you will have gathered from my remarks on the balance-sheet, the inroads we have had to make on our liquid resources for equipment and development makes it necessary that we should concentrate on building up our reserves.

CHAIRMAN'S ADDITIONAL REMARKS

Addressing the meeting, the Chairman said: I have little to tell you in addition to the information given in my printed speech. The improvement in the underground position continues. It has been possible to raise gold output by a further 250 ounces monthly with the expectation of maintaining this. Development results continue to be interesting.

On No. 19 level the South ore body, now proved over a length of 175 ft, has an average width of 16 ft and carries values of 9.2 dwts per ton. Good progress continues on both the central and internal shafts.

The report and accounts were adopted.

CAMP BIRD

The fifty-first annual general meeting of Camp Bird, Ltd., was held on May 5, at the Chartered Insurance Institute, 20, Aldermanbury, London, E.C., **Mr. F. C. Heley,** chairman of the company, who presided, in the course of his speech said:—

Once again, the year under review was a far from easy one. The costs of production have progressively risen, while the price of commodities has fallen at a rapid rate. The result of this anomaly is only partly seen in the accounts before you, and the more serious effects will, I am afraid, only become apparent during the present year.

The profit for 1952 was approximately £48,000 less than the previous year, although the gross dividends received were £34,000 greater. I drew attention last year to the steady improvement in dividend income, and it is encouraging to note that this was well maintained during the year under review.

The investment reserve brought forward from 1951 amounted to £81,544. We considered it advisable to apply £46,770 to write down the book values of certain of our investments, but the transfer of £50,000 to this account has restored the reserve to £84,774.

In view of all the circumstances, we decided to recommend the payment of a dividend of one shilling per share, subject to tax, and to reduce, the carry-forward by approximately £8,000.

GOLD AND PLATINUM HOLDINGS

This concludes my usual brief summary of the results for the past year. What of the future?

I wish to emphasise that 67 per cent. of our investments are in gold and platinum mining.

Some of these concerns have already entered the dividend list, and we had hoped that by the present time others would have followed suit, but such huge sums are now involved in the development and equipment of new gold mines that the return to the shareholders by way of dividend is likely to be subject to considerable delay. However, Blyvoor, and West Wit. Areas are already among the dividend payers, and the West Driefontein Company, among others, will eventually join them.

SILVER AND BASE-METAL INTERESTS

Nineteen per cent. of our investments are in silver and base-metal mines and here the story is far from encouraging. The abnormal demand for these metals during the whole of 1951, together with the general inflation at home and abroad, were the chief causes of the high level of prices, aided by competitive bulk buying, and Government control, and the cessation of this control has precipitated the heavy fall in the prices of both lead and zinc.

While we can only applaud the return to normal trading, we, as the holder of substantial blocks of shares in base-metal-producing companies, must face the fact that our dividend income from that source is bound to show a considerable reduction during the current year, as compared with the period under review.

In the case of the Lake George Company, for instance, high prices of lead and zinc enabled that concern to declare the highest dividend of its history towards the end of 1952, while early this year the company announced that it was deferring any consideration of a dividend until further details were available as to the financial return to be expected owing to the heavy fall in the market prices of its principal products.

The Fresnillo Company has also been a substantial contributor to our dividend income, but the distribution announced in December last showed a reduction from 70 cents to 40 cents per share, so that for the current year we have to envisage a substantial decline from the former high rate.

The return from the Camp Bird Mine will also be adversely affected by the fall in the market price of base metals. As you are aware the mine is being developed by tributors. The royalties accruing to us showed a marked decline, even during the year 1952, and early this year we were informed that the tributors had decided to curtail production, and operate only one underground shift per day. This is unfortunate, as some favourable indications of higher grade material have recently been met with, but I am glad to say that development work will proceed in this particular area, and we hope will have the effect of considerably improving future prospects.

I regret that I have been unable to present a more favourable picture as regards our base-metal interests, but you will probably be interested to learn that the "break-up" value of our assets at the end of the year under review was 20s 7d per share, before making provision for the dividend. I need hardly repeat my annual warning that this figure is only of value for purposes of comparison, but it provides some indication that the position generally remains satisfactory.

The report and accounts were unanimously adopted.

TRIEFUS & CO. LTD.

(Importers and Exporters of Industrial Diamonds Manufacturers of Diamond Tools and Drill Bits)

APPOINTMENT AS GOVERNMENT VALUERS

The sixth annual general meeting of Triefus and Co., Ltd., was held on May 1 in London, **Mr. Albert Triefus** (chairman and joint managing director) presiding.

In his circulated statement he said that the consolidated profit and loss account incorporating the results of the subsidiary companies showed a net profit of £103,076, as against £195,083 for 1951.

They were now returning to more normal trading where industrial diamonds and diamond tools were being consumed by engineering organizations instead of being buried in the vaults of stockpiling Governments.

During the year the company accepted the appointment of Government Valuers to the Gold Coast in respect of their diamond production. That work entailed the grading, sorting and valuation of diamond shipments of considerable amounts and satisfaction had been expressed as to the way this work was being carried out.

They further accepted, in conjunction with the firm of H. Couzyn, the appointment as Government Valuers to Tanganyika.

The directors recommended the payment of the fixed dividend on the Preferred Ordinary shares at the rate of 20 per cent per annum for the half-year to December 31, 1952, together with a further 5 per cent per annum for the year ended on that date, making with the interim dividend paid for the first six months a total dividend at the rate of 25 per cent per annum and the payment of a dividend at the rate of 13 per cent per annum on the Ordinary shares.

The sale of diamond tools and diamond powders to the engineering industry as well as diamond drill bits to mining companies continued to show a satisfactory upward trend.

The report was adopted.

Mining Men

Mr. Robert Foot, in accordance with the recent changes made in the administration of Wankie Colliery, has relinquished his appointment as executive chairman and resigned from the Board on April 30. **Mr. T. Coulter** was elected chairman from May 1 and **Mr. L. Wishart** was appointed to the Board and to the position of managing director with effect from the same date.

Mr. Louis A. Turnbull and **Mr. Russell E. Morgan,** Bureau of Mines engineers, have left Washington for Manila to make a reconnaissance survey of Philippine coal deposits to determine the feasibility of expanding coal production.

They will undertake the investigation, having been assigned to the Bureau's Washington headquarters. The survey, which will consume three months, has been requested by the Philippine Government and the Mutual Security Agency. At present the electric power industry, the railroad and many industries in the Philippines use imported fuel oil. The total production of coal in 1951 was only 150,000 tons. Little is known about new sources of coal but if investigation by the Bureau engineers determines that coal deposits are favourable for low-cost mining the Philippine Government will consider the possibility of converting some fuel oil plants to coal.

Mr. H. R. Mitchell has joined the boards of United Tin Areas of Nigeria and Ribon Valley (Nigeria) Tinfields. Mr. Mitchell has recently relinquished the post of Chief Inspector of Mines in Northern Rhodesia.

Mr. C. J. Burns has been elected an additional director of East Rand Consolidated.

The World's Greatest Bookshop

FOYLES

FOR BOOKS

Large dept. for Technical Books

New, secondhand and rare Books on every subject. Stock of over 3 million volumes

Subscriptions taken for British, American & Continental magazines

119-125 CHARING CROSS RD., LONDON, W.C.2

Gerrard 5660 (16 lines) ✱ Open 9-6 including Saturdays

Two minutes from Tottenham Court Road station

THE BRITISH ALUMINIUM CO. LTD.

IMPROVED PRODUCTION EFFICIENCY
LORD PORTAL ON POTENTIAL DEMAND

The Annual General Meeting of The British Aluminium Co. Ltd., was held on May 5, in London.

The Rt. Hon. Viscount Portal of Hungerford (the chairman) in the course of his speech, said:

The consolidated income for the year after tax amounts to £676,705. This compares with £906,028 for the previous year. Taxation has taken an increasingly heavy toll, but it is encouraging that in his recent Budget the Chancellor has taken some steps to lighten the intolerable burden of taxation which has been weighing on the country and progressively reducing efficiency and stifling enterprise. It is greatly to be hoped that in succeeding years this trend will be accentuated and widened so that industry may be enabled more and more to play its vital part in the support of the National economy.

PRODUCTION AT ROLLING MILLS

The very firm demand for our Rolling Mill products which had persisted throughout 1951 continued through the earlier part of the year under review, but during the second half trading conditions were by no means so easy or satisfactory. A number of factors contributed to the reduction of our business and eventually made it necessary towards the end of the year to curtail production at our Rolling Mills. In the first place, many of our customers during the period when deliveries were protracted took the logical course of building up stocks to the greatest possible extent. With the general falling-off in consumer demand, the higher cost of replacement, increased costs of financing stocks and greatly eased delivery periods, there has been a natural tendency to use the bulk of these stocks before placing further orders.

There has also been a re-scheduling of the rearmament programme, as officially referred to by the Prime Minister. In addition, recurrent rises in the price of virgin aluminium have rendered our competitive position, particularly in relation to steel and tin-plate, increasingly difficult. At the time of the Annual General Meeting last year and following successive rises on January 1, 1952 and April 1, 1952, the Government's price for virgin aluminium stood at £154 per ton, having stood at £124 at the end of 1951. It was raised to £157 per ton on July 1, and again to £166 per ton on October 20. The percentage increase from the end of 1951 to the middle of October, 1952, was no less than 34 per cent. These rises have been due to increased costs for imported ingot, aggravated by a hardening of the Canadian rate of exchange. On April 1 the price was lowered to £161 per ton.

So far as our own production of virgin aluminium is concerned (and this as you know represents something under half our total requirement), we have, as from January 1 this year, been released from the obligation to sell to the Government and re-purchase. This decision not only does away with the somewhat cumbersome procedure which has had to be followed in the past fourteen years, but should enable us to show a more realistic rate of return on the very large investment in bauxite mines, Alumina Works and in reduction facilities in the Highlands of Scotland. We will continue to sell some of our production to other fabricators who require it in forms and qualities not available from overseas. This metal will be sold at Government prices and replaced with metal purchased from the Ministry of Materials, until such time as sales of all ingot are released to private interests.

Our production of virgin aluminium during the year under review was slightly greater than in 1951. This increase actually indicates considerably improved efficiencies which we are now obtaining from our work of modernization at Lochaber and Kinlochleven, since two unavoidable factors operated to reduce output during the year. In the first place, a shortage of water in the autumn caused some reduction of load at Kinlochleven. A more serious reduction was caused at Lochaber since the necessity arose to close down our Works there so that we could empty the main water tunnel. A few years ago damage was done to two water intake shafts by very heavy rains, and a considerable amount of rock and debris was carried into the tunnel.

We have continued to draw our supplies of bauxite from the Gold Coast, and to a lesser extent from France, and following reconstruction of Takoradi Harbour we have now been able to step up our rate of supplies from Africa. Owing to delays in delivery and erection of plant we have not yet completed our new arrangements for ore handling and washing at the mines, but this work will be finished this year.

WIDER RANGE OF PRODUCTS

During the early part of the year our Rolling Mills operated to the limit set by the metal rationing arrangements agreed between the Government and the industry, but the decrease in demand in the last quarter of the year made necessary some considerable reductions in the scale of operations. The new thin gauge strip mill at our Falkirk Works was completed and its operation so far has been most encouraging and should be of great benefit to us. At this Works a number of new items of plant are nearing completion. These will not only give us a generally better balance of production and an increase in efficiency, but will enable us to introduce a wider range of products and to expand our sales of sheet and strip for such purposes as building and construction, ship-building, architectural metal-work, domestic equipment, box-making and capping.

VOLTA RIVER PROJECT

In previous years reference has been made to the Volta River project on the Gold Coast. You will no doubt have observed from the Press that as a result of a series of meetings in which representatives of the British Government, the Gold Coast Government, Aluminium Limited of Canada and your Company participated, certain basic conclusions were reached. A White Paper was published, and a Commission has been set up under the Chairmanship of Commander R. G. A. Jackson, R.A.N., to investigate and report on the whole question. The problems involved are, like the scheme itself, of great magnitude, and there is nothing which I can add to what has already been published.

CURRENT YEAR'S TRADING CONDITIONS

In the early months of 1953 trading conditions were more difficult than they have been for many years. There are recent signs that the recession in our industry is becoming less severe, and in order to stimulate trade to the greatest possible extent we have, since the recent decrease in the price of ingot, introduced considerably greater reductions in prices for basic and larger quantities of sheet and strip in pure aluminium and medium strength alloys. On the other hand, we have found it necessary to increase the differentials charged for small quantities, which remain unaltered since 1948, to compensate for the much greater cost of manufacturing small items.

Development work has continued actively, and we have every reason to be optimistic as to the long-term future of our metal. Perhaps one of the most encouraging features has been the great improvement effected in welding techniques. To take one example, the advent of the self-adjusting gas-shielded arc-welding method should open up a number of new fields.

We have co-operated with a leading manufacturer in the design and building of a new type of chassisless bus which has attracted great interest and represents a definite step forward in the application of aluminium to road transport. The expansion of our business with ship-builders is particularly encouraging and increased tonnages should be absorbed as this industry gains experience and confidence in the use of aluminium.

The potential demand for aluminium for houses, schools and specialized buildings such as hangars, chiefly for use in overseas countries and tropical regions, is substantial. In the packaging field the uses of capping material and foil are soundly established and demand for these purposes is likely to expand. Our foil-stock is in considerable demand by foil rollers and production is at a high level.

Another most encouraging development is in electrical cable sheathing. In one type the cable is sheathed with rolled and welded aluminium strip which is subsequently corrugated to improve flexibility. Aluminium sheathed cable produced by direct extrusion of Super Purity aluminium should make its appearance in the near future. Consumption of fabricated Super Purity aluminium for roofing and other purposes continues to progress and the increasing demand for our Super Purity ingot in the United States indicates considerable interest in the use of this metal.

Our Research Laboratories have continued their good work. Their contribution towards the improvement of our process efficiencies is of vital importance in periods of intensified competition. Much of the work done in this field has been of great benefit to us in balancing the ever-increasing costs of materials and labour.

The total consolidated profit for the year is £2,460,991 compared with the corresponding figure in the previous year of £2,549,068, a reduction of £88,077.

When we add to the net income of the Parent Company the amount brought forward from the previous year and deduct the various appropriations and provisions set out in the Directors' Report, we are left with the sum of £793,455. After taking into account the dividend for the year on the Preference Stock, we recommend a Final Dividend of Six per cent on the Ordinary Stock which, with the Four per cent already paid, makes Ten per cent less Tax for the year. We also recommend payment of a Cash Bonus on the Ordinary Stock of Two per cent less tax. This leaves £431,205 at credit of Profit and Loss Account of the Parent Company; an increase of £7,388.

The report and accounts were adopted.

Metal and Mineral Trades

Contractors for Ores · Concentrates · Residues containing

LEAD

ZINC - COPPER - ANTIMONY - WOLFRAM

CREECHURCH HOUSE, LONDON, E.C.3
Telephone: AVENUE 5341
Cables: ORMINLAZ LONDON

LEOPOLD LAZARUS LTD

Offices at: SYDNEY, CALCUTTA and JOHANNESBURG

THE COMMERCIAL METAL COMPANY LTD

66 GRESHAM STREET, LONDON, E.C.2

ORES, METALS, ALLOYS, STEEL, CHEMICALS AND ALUMINIUM POWDERS

Telephone: MONARCH 0211 (8 lines) (Members of the London Metal Exchange) *Cables*; COMETALCO LONDON

MINING & CHEMICAL PRODUCTS, LTD.

MANFIELD HOUSE, 376, STRAND, W.C.2

Telephone: Temple Bar 6511/3
Telegrams: "MINCHEPRO, LONDON"
Works: ALPERTON, WEMBLEY, MIDDLESEX

Buyers of Silver Ores and Concentrates

Smelters and Refiners of

BISMUTH

ORES, RESIDUES & METAL

Manufacturers of:

FUSIBLE ALLOYS, SOLDER, WHITE METALS ANODES OF TIN CADMIUM and ZINC IN ALL SHAPES

Importers and Distributors of:

ARSENIC · BISMUTH · CADMIUM INDIUM · SELENIUM · TELLURIUM

ROKKER & STANTON LTD.

DRAYTON HOUSE, GORDON STREET
LONDON, W.C.1

Metal Stockists & Shippers

for

BRASS, COPPER, ALUMINIUM AND NICKEL SILVER

in

Sheets, Rods, Tubes, Strip, Wire, etc.

Associated Companies in Holland and Belgium; also Regd. in South Africa and Rhodesia.

Tel: EUS 4751/2 Cables: BENTLY 2nd; A.B.C.6
Grams: ROKKER, WESTCENT, LONDON

EASTERN SMELTING CO. LTD.

CAPITAL—AUTHORISED £500,000: £435,000 ISSUED

Head Office: **ST. SWITHIN'S HOUSE, 11/12 ST. SWITHIN'S LANE, LONDON, E.C.4**

Telephone: MANsion House 2164/7 *Telegrams:* TIMAMASA, PHONE LONDON

TIN SMELTERS

BRANCHES THROUGHOUT THE FEDERATION OF MALAYA

Sole Selling Agents: **VIVIAN, YOUNGER & BOND, LIMITED, PRINCES HOUSE, 95 GRESHAM STREET, LONDON, E.C.2**

Telephone: MONarch 7221/7

ROURA & FORGAS, LTD. *Telephone No:* **GERRARD 9641**

Sole Sterling Area Suppliers of

ITALIAN QUICKSILVER

PRODUCED BY MONTE AMIATA, S.M.P.A.

COLQUHOUN HOUSE,
27/37 BROADWICK STREET, LONDON, W.1

EVERITT & Co. Ld. 40 CHAPEL STREET LIVERPOOL
Teleg. Address: Persistent, Liverpool Phone: 2995 Central

SPECIALITY

MANGANESE PEROXIDE ORES,

We are buyers of:—
WOLFRAM, SCHEELITE, MOLYBDENITE
VANADIUM, ILMENITE, RUTILE,
ZIRCONIUM and TANTALITE ORES

Suppliers of:—
FERRO-ALLOYS & METALS NON-FERROUS ALLOYS

HENEAGE METALS
for Quality Ingots IN BRASS, GUN METAL & PHOSPHOR BRONZE.
PHONE ASTON CROSS 1177/8
HENEAGE METALS LTD. HENEAGE ST. BIRMINGHAM.

MAYBANK METALS LTD.

This Company backed with the vast experience gained in a 100 YEARS of progressive trading, will expedite all orders...

THE BUYING OF MIXED OR SORTED NON-FERROUS SCRAP METALS and Supplying of Finely Graded Non-Ferrous Scrap to Your Requirements.

MAYBANK METALS LTD.
STAR WORKS, SPURGEON STREET, SOUTHWARK
LONDON, S.E.1 Telephone: HOP 2432/3
HOP 4212/3/4

International Smelters and Buyers of

NON-FERROUS
SCRAP METALS AND RESIDUES

TIN
LEAD
WHITEMETAL
SOLDER
GUNMETAL
COPPER

THE EYRE SMELTING CO LTD
Tandem Works, Merton Abbey, London, S.W.19
Phone: Mitcham 2031 Wire: Eyrsmeltin, Phone, London

ENTORES, LIMITED
KINGS HOUSE, 36 & 37 KING STREET,
LONDON, E.C.2

NON-FERROUS METALS
ORES · RESIDUES

Telegrams: Entores, Phone, London *Telephone:* MONarch 341

LEONARD COHEN LTD.

GOLD, SILVER AND THE PLATINUM METALS
ORES, CONCENTRATES AND RESIDUES
METAL HARDENERS
NON-FERROUS METAL INGOTS

London Office: 1 HAY HILL, W.1 Telephone: GROSVENOR 6284
Works: PORTH, GLAM Telephone: PORTH 288

H. BARNETT LTD.
VICTOR ROAD, LONDON, N.7.
IMPORT : EXPORT
Phone: ARCHWAY 5461 (5 lines) Established 1865
WE SPECIALISE IN ALL NON-FERROUS SCRAP AND INGOT METALS

THE STRAITS TRADING COMPANY, LIMITED
Head Office:
P.O. Box 700, OCEAN BUILDING, SINGAPORE
Works:
SINGAPORE & PENANG
"The Straits Trading Co., Ltd."
Brand of Straits Tin

THE BRITISH TIN SMELTING COMPANY, LIMITED
Works: LITHERLAND, LIVERPOOL
Smelters of Non-ferrous Residues and Scrap

London Agents:
W. E. MOULSDALE & CO., LTD.
2 Chantrey House, Eccleston Street, London, S.W.1
Cables: Womoulanco, London Telephone: SLOane 7288/9

THE BRITISH METAL CORPORATION LTD
BMC

LONDON
MONTREAL · TORONTO · VANCOUVER
SYDNEY · PERTH · MELBOURNE
CALCUTTA · BOMBAY · KARACHI
LAHORE · JOHANNESBURG · BULAWAYO

ASSOCIATES :

C. TENNANT, SONS & CO. OF NEW YORK, NEW YORK
VIVIAN YOUNGER & BOND LIMITED, LONDON AND NIGERIA
HENRY GARDNER & CO. LIMITED, LONDON, CANADA AND MALAYA

The Group trades in and markets non-ferrous ores, metals and minerals, many kinds of produce, timber and other materials ; it provides coal-washing plant, ventilation plant and other specialist engineering equipment; and it furnishes allied shipping, insurance, secretarial, financial, technical and statistical services.

PRINCES HOUSE
93 GRESHAM STREET, LONDON, E.C.2

TELEGRAMS : *Brimetacor, London* CABLES : *Brimetacor, London* TELEPHONE : *MONarch* 8055
Branches at BIRMINGHAM and SWANSEA

ACLOQUE & CO.
A.I.D. & A.R.B Approved for
MECHANICAL TESTING, SAMPLING AND METALLURGICAL ANALYSIS
26 Bloomsbury Way, London, W.C.1 HOLborn 4487
Telegrams: Vanadium, Westcent, London *Cables;* Vanadium, London
Test House and Laboratories: GARTH ROAD, LOWER MORDEN, SURREY

SILTA S.p.A.
Minerals, Metals, Ferro-Alloys, Ores and Concentrates
We buy:
CASSITERITE RESIDUES CONTAINING Ta-Nb OXIDES
MILANO, Corso Matteotti, 9
Cables: Siltam, Milano Phones: 700.696-701.715

LEO RAPP LTD. *NON-FERROUS METALS*
METAG LTD. *NON-FERROUS TUBES*
LEO RAPP (Steel) LTD. *STEEL STOCKISTS*
Buyers and Sellers
All at: 60a PURLEY AVENUE, LONDON, N.W.2
Telephone : GLAdstone 6393/4/5/6

Sellers of
GRADED SCRAP & RE-MELTED SPELTER
Buyers of
NON-FERROUS METALS, RESIDUE SCRAP & ORES
FOR KEENEST PRICES & MOST SPEEDY SERVICE CONTACT
ELTON LEVY
& COMPANY LIMITED
Head Office: 1-4 St. Ermin's (West Side) Caxton St., London, S.W.1
Phone: ABBEY 6582/3/4 Grams: Eppenleco, Sowest, London

GEORGE T. HOLLOWAY Co. LTD.
Metallurgists & Assayers
ORE TESTING, WORKS AND METALLURGICAL RESEARCH LABORATORIES
Atlas Road, Victoria Road, Acton, LONDON, N.W.10
Telephone: ELGAR 5202 *Grams and Cables:* NEOLITHIC LONDON

Can we
MAKE YOU AN OFFER FOR YOUR
WOLFRAM TAILINGS & RESIDUES?
Any quantities accepted.
Highest prices paid.
MAXWORTH METAL PRODUCTS LIMITED
Norton Canes, Cannock, STAFFS Phone: Heath Hayes 329
Grams: Maxmet, Cannock
M-W. 52

DEERING PRODUCTS LTD.
8 GREAT SMITH STREET, LONDON, S.W.1
ORES - MINERALS - REFRACTORY RAW MATERIALS
Telephone: ABBEY 2681/2 Cables: PRODEERING, LONDON

PLATT METALS LTD.
METAL MANUFACTURERS and MERCHANTS
Buyers of
BRASS ROD SWARF AND SCRAP, and all descriptions of NON-FERROUS SCRAP METALS, BORINGS AND RESIDUES
Sellers of
BILLETS AND INGOTS TO ANY REQUIRED COMPOSITION, GRADED NON-FERROUS SCRAP METALS
METALEX WORKS, Great Cambridge Road, ENFIELD, Mddx.
Telephone: HOWard 3351 (5 lines) Telegrams: Walton, Enfield

we buy
CONCENTRATES
ORES RESIDUES
containing
Base and Precious
METALS

E. M. JACOB & CO. LTD.
Members of the London Metal Exchange
HANOVER HOUSE, 73-78 HIGH HOLBORN, LONDON, W.C.1
Telephone CHAncery 3625 (5 lines) *Cables:* JACOMETA, LONDON

Smee's 352J

Telephones: HOP 1071 (2 lines) CANONBURY 5956 *Cables & Telegrams:* LUNZMETAL, LONDON
S. B. LUNZER & CO., LTD.
Members of The National Association of Non-Ferrous Scrap Metal Merchants
IMPORTERS NON-FERROUS METALS : SEMIS INGOTS : SCRAP AND RESIDUES *EXPORTERS*
Office:—WESTMINSTER BANK CHAMBERS, LONDON BRIDGE LONDON S.E.1.
Warehouse:— 16b, ST. PAUL'S PLACE, CANONBURY N.1.

ZINC SHAVINGS
GRANULATED & POWDERED
NON-FERROUS METALS
"Lead Wool" for Pipe-jointing.
Metallic Packing for Pumps, etc.
THE LEAD WOOL CO., LTD.
SNODLAND KENT
Telephone: Snodland 84216 & 7 Telegrams: "Strength, Phone Snodland"

JCG
★ METALS
★ ORES
★ MINERALS
of every description
J.C. Gilbert LTD
COLUMBIA HOUSE, ALDWYCH
LONDON, W.C.2
MONTREAL · NEW YORK · BUENOS AIRES · RIO DE JANEIRO · SYDNEY · HONG KONG

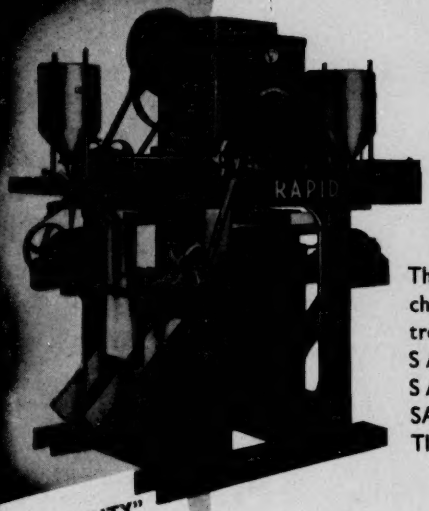
"Tropag"
ASBEST- & ERZIMPORT OSCAR H. RITTER K. G.
Hamburg ·—· Ballindamm 7
ASBESTOS - ORES - MINERALS
Import Export Transit

THE MINING JOURNAL
1953 ANNUAL REVIEW NUMBER
Summarizes events and statistics of 1952
Price 7/6—Orders for Copies should be placed direct or through Newsagent
Write: THE PUBLISHER, MINING JOURNAL, 15 Wilson Street, Moorgate, London, E.C.2

RAPID

Electro-Magnetic ORE SEPARATORS

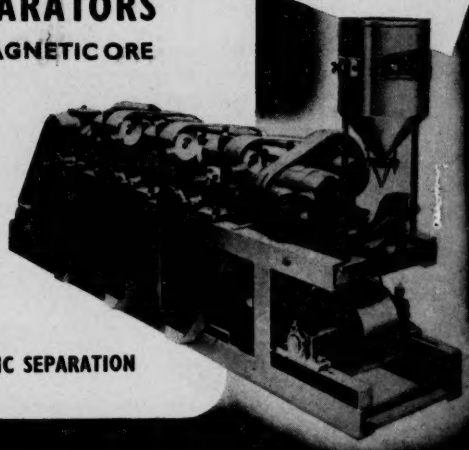
For FEEBLY MAGNETIC ORE



"RAPIDITY"
High speed separation and extraction of one magnetic mineral

These proved machines successfully treat MONAZITE SANDS, TIN SANDS, IRON SANDS, WOLFRAM TIN, CORUNDUM, etc.

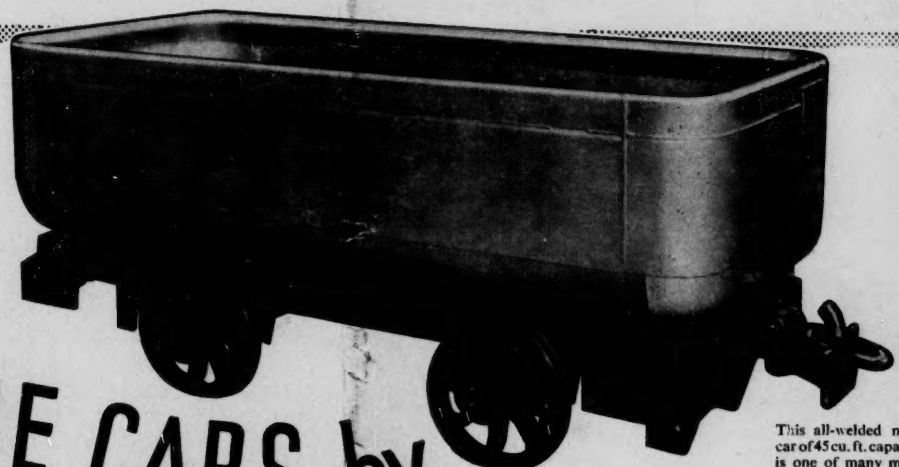
"RAPID O.G."
Super Selective separation of one, two, or up to six magnetic minerals, from the bulk in one passing



THE RECOGNISED AUTHORITY ON MAGNETIC SEPARATION

RAPID MAGNETIC MACHINES LIMITED

LOMBARD STREET, BIRMINGHAM, 12 Tel: VIC. 1137. 'Grams: "Magnetism, B'ham."



MINE CARS by BUTTERLEY

This all-welded mine car of 45 cu. ft. capacity is one of many made by Butterley to the latest N.C.B. specification.

FOUNDED 1790

THE BUTTERLEY COMPANY LIMITED · RIPLEY · DERBY · ENGLAND

LONDON OFFICE: 20 ASHLEY PLACE · VICTORIA · S.W.1

PT50a.

Published by The Mining Journal Ltd., 15 Wilson Street, Moorgate, London, E.C.2, and printed by Washburn & Sons Ltd., 25-27 Queens Road, Southend-on-Sea, Essex. Registered as a Newspaper.